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This document is the fifth in a series of six annotated bibliographies relevant to early childhood education. Its general subject is social, and it includes three subdivisions: interpersonal relations, sex-role identification, and social reinforcement. Each of the 45 abstracts included has been classified by general and specific subject, by focus of study, and alphabetically by author. Focus of study categories are normative, environmental, measurement and techniques, intervention and general. The general subjects of other bibliographies in the series are language, personality, cognition, education, and physical aspects of early childhood education. (JS)

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1968

This bibliography is Number 5 in a series of six. The general subject is Social, and it is divided into the following specific subjects:

1. Interpersonal Relations
2. Sex-Role Identification
3. Social Reinforcement

The five other bibliographies in this series contain the following general subjects:

1. Physical
2. Language
3. Education
4. Cognition
6. Personality

Every abstract in this series has been coded at four levels; namely, general subject, specific subject, focus of study, and alphabetical by author. In all six bibliographies, the categories under focus of study have been coded as follows:

1. Normative
2. Environmental
3. Measurement and Techniques
4. Intervention
5. Pathology
6. Physiology, Etc.
7. Animals
8. General

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5.1
INTERPERSONAL RELATIONS

5.1.1 NORMATIVE

5.1.1.1 Berg, I., Stark, G., and Stella J. Measurement of a stranger's influence on the behaviour of young children with their mothers. 1966. Unpublished.

Purpose: To discover whether the attending psychiatrist working in a clinic with pre-school children accompanied by their mother sees an average behavior sample of a child's clinging or exploratory behavior or if his presence influences the frequency of this behavior in the child.
Method: Seventeen normal preschool children (ages 2 to 4) were randomly selected by the experimenters from the patients at a child welfare clinic in a middle class neighborhood of Edinburgh, Scotland. Mother and child subsequently came by appointment to the University, where they were observed through a one-way mirror during two 20-minute sessions, one succeeding the other. During one session, the mother was interviewed by one of the experimenters and during the other session, she and the child were alone in the room which contained toys of all sorts. A circle with a radius of 4 feet was measured and centered on the mother's chair; this served as the dividing line between clinging and nonclinging behavior. Thirteen mothers completed the Eysenck Personality Inventory (EPI), most of them completing it at home.
Findings: I. Three response groups emerged from the children's reactions to the stranger: (1) Greater amount of proximity and contact with mother when stranger present; seven children spent more than 15 minutes of the 20 within the circle when the stranger was present and an average of 9:17 when the stranger was absent. The difference between the two periods was always greater than 5 minutes for each child. Contact with the mother was greater now and eye rubbing also increased. (2) Shyness, displacement activities: four children who spoke much less when the stranger was present and participated in increased displacement activity; e.g., eye rubbing and finger sucking. (3) Irregular reaction: six children; three of them showed more exploratory behavior and less contact behavior when the stranger was present; three seemed to behave similarly in both situations. II. EPI scores were divided into two groups, above 8 and below 8--to 7.9. A comparison between the mothers' scores on the EPI and the time difference spent by the child in the circle during both sessions was significant at $p < .02$. That is, there was a relationship between the mother's score and the difference in time spent within 4 feet of the mother during each session. This comparison used the NA score on the

EPI. Scores over 8 related to child's greater proximity to mother in stranger's presence. On the EA scores, Group I received a significantly lower score, $p < .001$, but this is not thought to be related to the NA score since they are considered to be independent. Conclusion: The exact influence of strangers upon preschool children was not determined or partially observed in this study because of poor methodology and small number of subjects.

5.1.1.2 Crandall, R., and Robson, A. Children's repetition choices in an intellectual achievement situation following success and failure. Journal of Genetic Psychology, 1960, 97, 161-168.

Problem: To study failure-avoidance versus task-oriented behavior as determined by the subject's selection of one of two puzzles after completing one successfully but failing to do so on the other. Also, to see if the independent variables of age and sex were related to these behavioral patterns.
Subjects: 59 aged 3 to 9; middle class families in Ohio. All families were members of the Fels Institute Longitudinal Study. Children were divided into two groups: (a) 30 aged 3, 4, and 5, who attended the Fels Experimental Nursery School; (b) 29 aged 6, 7, and 8, who attended the Fels Day Camp after their regular school had closed. No information was given about sex distribution.
Method: (a) Each child was given two 7-piece puzzles to solve. They were told that their performance would be timed and that they had 1 1/2 minutes to complete a puzzle. The puzzle that the child was to experience failure on was taken from him when he had five out of seven pieces correctly placed and he was told, "You didn't finish it in time." With the alternate puzzle he was allowed to finish with experimenter stating immediately following its completion "You finished that one before your time was up." The child was then told that he had time to do another puzzle and to choose the one he preferred. (This was called a "repetition choice" by the authors.) (b) Two observers made daily time sample observations of each child's interaction with peers and adult staff. Each observer independently rated the child on six social behavior variables: amount of achievement efforts displayed in free play; amount of help seeking from other children; amount of help seeking from adults; amount of approval seeking from children; amount of approval seeking from adults; and readiness of withdrawal in threatening situations.
Results: (1) No significant difference between the age groups in preference for the failed versus the successfully completed puzzle was found. (2) Grade school boys (ages 6 to 8) preferred the previously failed puzzle more often than nursery school boys ($p < .01$) and significantly more often than grade school girls ($p < .01$). No such difference was found between nursery school girls versus nursery school boys or nursery school girls versus grade school

girls. On the six behavior variables: (1) In the grade school group, no sex difference was found in the amount of achievement efforts displayed. However, girls sought help and approval from both peers and adults significantly more often than boys, and girls more readily withdrew from a threatening situation. (2) No significant differences were found between nursery school girls and nursery school boys on any of the six variables.

Conclusion: The authors concluded that grade school boys showed greater task mastery orientation than grade school girls and that this behavior was related to cultural patterns of earlier independence training for middle class boys as compared to middle class girls.

5.1.1.3 Ford, B. L., and McCaffrey, A. An exploratory investigation of 'power' among nursery school children by the method of resource process analysis. Cornell Journal of Social Relations, 1966, Spring

Problem: "We were concerned with discovering a rationale to investigate both the quantitative existence of power among nursery school children, and the qualitative nature of that power... we also wanted to discover if the children would display differences in the manner in which they exercised their power; i.e., in their 'style' of power."

Subjects: Ten 4-year-old children attending the Cornell Nursery School (five boys, five girls). No information was given about the selection of the subjects, socioeconomic background or intelligence.

Method: The method used is called the Resource Process Analysis (RPA), which is based on the theory of social exchange which assumes that "interpersonal behavior is an exchange process whereby each actor provides resources for the other in exchange for resources received." In the authors' coding system, there were two primary resources in the nursery school: information and freedom. Information was "non-prescriptive, non-evaluative description about some part of the phenomenal world of the interactors," and freedom was "the ability to do whatever one wants whenever one wants to do it." A second group of categories were called behavioral modes. These modes indicated "how these resources became salient, whether or not they are transmitted, and the direction of flow of these resources." Three stimulus modes are listed: seeking, offering, and depriving a resource. Six response modes are offering, accepting, nonaccepting, rejecting, withholding, or ignoring a salient resource.

Procedure: Data was collected in the morning, with both experimenters simultaneously collecting a narrative record for each child. The records were gathered on 2 days; 5 minutes, the first time and 3 minutes, the second (no mention was made of the time lapse allowed between the first and second record). Each experimenter individually coded his own records for each child. Reliability ranged between 75 and 100 percent for the larger units of behavior and 75 and 96 percent for coding the behavior within each unit. In addition, three teachers were asked to rank the 10 children on "power" defined as "the amount of influence, direct or indirect, that is potentially available to a given child at any given moment in his interaction with another child or children." The teachers were also asked to rank the children on their style of social behavior; i.e., autocratic or diplomatic. These terms were not defined for the teachers.

Analysis: Only the behavioral modes were used. Six indices were derived from the coding: (1) behavioral power--index of power derived from the frequency of attempted deprivations by each child summed across all exchanges; (2) resource possession I--number of times subject successfully offers a resource; (3) resource possession II--instances where at least two children seek or deprive subject of resource; (4) interactional efficiency--ratio of successful interactions over the summation of successful and unsuccessful interactions; (5) autocratic style--the ratio between the number of deprivations and the number of offerings made by subject; (6) diplomatic style--ratio between seeking and offering.

Results: The ratings on the six indices were correlated with the teachers' rating. (1) There was a negative, but insignificant, correlation between the authors' category of behavioral power and the teachers' rating of power. (2) behavioral power correlated significantly ($p < .01$) with autocracy, "which is perhaps to be expected since they are both so dependent on deprivation scores." (3) Both of the authors' categories of behavioral power and autocracy are significantly related ($p < .01$) to the teachers' category of autocracy.

Conclusion: The authors state that "contrary to predictions, possession of resources is not related to behavioral power but is related in a small degree to teachers' judgment of power." As to why children are autocratic, the authors state "it is not because they are powerful, but on the contrary, because they do not possess necessary resources."

5.1.1.4 Franco, D. The child's perception of "The Teacher" as compared to his perception of "The Mother." Journal of Genetic Psychology, 1965, 101, 133-141.

Problem: To investigate the relationship between the child's perception of the teacher and the mother and, if there is a relationship, to explain it in terms of the Freudian concept of transference.

Hypothesis: (1) The child's perception of the teacher is related to his perception of his mother at the beginning of the school year. (2) The relationship between the perception of the teacher and the mother is greater, at the beginning of the school year, in the case of children who exhibited greater problems with authority in the classroom (by way of rebelliousness or submissiveness). (3) The relationship between these two perceptions is decreased by

the end of the school year, but the decrease is less in the case of children who exhibit problems with authority in the classroom.
Subjects: 75 between the ages of 5 and 6 (33 boys, 42 girls). None had previous nursery school experience. All attended kindergarten in a public school in a lower income neighborhood in New York City. Ethnically the sample consisted of predominantly Catholic children, with an equal proportion of Protestant and Jewish children.
Method: At the beginning and end of the school year, 24 incomplete stories (12 about mother, 12 about teacher) centering on the role of the authority figure as a helper or a disciplinarian were presented to each subject. Subject was asked, "What will teacher/mother say (or do?)" From these stories two scales were devised for mother and two for teacher (helpfulness and discipline). Scorer reliability on the scales are: helpfulness scales: mother = .97, teacher = .93; discipline scales: mother = .88, teacher = .97. Test-retest reliability ranged from .53 to .79. In the middle of the school year, the teachers rated each subject on cooperation, submissiveness and rebelliousness.
Results: (1) There is a significant relationship between the subject's perception of the mother and the teacher at both the beginning and end of the school year. (2) At the beginning of the school year, those subjects who had problems with authority in the classroom showed a significantly greater correlation between perception of mother and teacher when they perceived them as disciplinarians rather than helpers. This relationship did not exist at the end of the year. (3) Stories involving defiance of the adult and physical or violent punishment from an adult evoked the greatest degree of similarity between perceptions of mother and teacher. These relationships were also most persistent over time.

5.1.1.5 Gewirtz, J. L. Three determinants of attention-seeking in young children. Monograph of Society for Research in Child Development, 1954, 19:2, 59, 46 pages.

Purpose: Using the theories of Dollard and Miller, Freud, Fenichel, and Skinner, the author developed a set of hypotheses predicting the influence of three independent variables: differential availability of adults, sex of subject, and sex of adult upon attention seeking behavior in preschool child.
Subjects: 56 subjects, 28 boys and 28 girls, white middle class, randomly selected from students in University of Chicago Nursery School; medium age of boys is 4:8; of girls, 4:7; ages range from 4:0 to 5:7.
Procedure: Subject is taken to room with an easel and told he can paint as long as desired; 3 feet behind child is a chair where adult sits during high availability sessions and watches subject; 5 feet behind subject is a chair and a desk where adult sits and works during low availability sessions. Subject is told that adult

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is to be with him (high availability) or adult is busy at work but can help child if asked (low availability). When introduced to subject at beginning of session, each adult is equally receptive to the child. The sex of the experimenter and subject by the availability condition is arranged so all possibilities occur an equal number of times. Observational categories for subject's behavior are: comments--casually made and requiring no answer; questions--casually asked and requiring only a brief answer; attention seeking--designed to get overt notice from adults via a request or a response; glances--momentarily directed towards adults; number of paintings done; and time child is in session. All sessions were observed through one-way mirrors by assistants who scored subject's behavior. Reliability studies on 28 subjects were conducted by all 3 experimenters working simultaneously; median agreement scores for the behavioral categories ranged from 77 percent to 99 percent.

Design: For each behavioral item, frequency scores were collected under each of the 8 possible conditions of a 2x2x2 design and transformed into their logarithms for statistical testing using analysis of variance. A perfect distribution of age of subject among all experimental conditions was impossible to obtain. An analysis of covariance was used to test the interaction of glances, paintings, and time.

Findings: (1) Consistant and significantly ($p < .05$) greater mean frequencies of attention seeking and glances were used by all subjects under low availability than high availability. The rank order for questions, comments, paintings, and time had a similar rank order under both conditions but were not significantly different from each other. (2) Interaction of sex of subject by sex of adult was reliable and significant ($p < .05$) for attention-seeking and significant ($p < .075$) for comments. Boys directed more attention seeking behavior to woman experimenter (significant $p < .01$), while girls directed a greater mean frequency of attention-seeking behavior to men than women, but not significantly different. A similar, but not a significant pattern, was observed for comments and questions behavior items.

Conclusions: The results reveal that the degree of adult availability and the interaction of subject by sex of adult are significant variables influencing the development and manifestation of attention-seeking behavior in preschool subjects.

5.1.1.6 Green, E. H. Friendship and quarrels among preschool children. Child Development, 1933, 4, 237-252.

Purpose: To study the relative role of group play and quarreling among preschool children, to study age and sex differences in social contacts and in quarrels, and to study the types of social play in which quarreling arises. Author reviews literature and finds no studies directly dealing with the relation of unfriendly and friendly contacts among preschoolers.

Subjects: 40 subjects; 21 boys, 19 girls at University of Minnesota Nursery; ages range from 2:1 to 5 years; boys average age was 3. 5; girls average age was 3. 9. Average IQ was 107. 7; range, 90 to 131.

Procedure: Subjects were observed daily for 30 seconds during morning or afternoon free play in nursery school by author; order of observation varies so that all children are observed at all times; there was 85 percent reliability between author's observations and those of an independent observer. Almost all subjects were observed 40 different times. Social interaction scores were obtained from looking at the number of times subject had opportunity to play cooperatively with particular peer and the number of times subject quarreled with a peer. Friendship index (F. I.) is the ratio of the number of times subject played with a particular peer to the number of times subject had opportunity to play with that same peer. Quarrelsome index (QI) was computed similarly. Quarrelsome-friendliness ratio (Q/F) was computed by dividing number of quarrels by number of times two children played together, because experimenter assumes all interactions contain some friendliness. Correlation between first 20 and second 20 observations on indices is 89. 5 percent using Spearman-Brown. Correlations between experimenter's observations and ones made to check reliability are F. I., . 90; Q. I., . 72; Q/F, . 77, using Spearman-Brown.

Design: Comparisons on each index are made between subjects of different ages and sex, and comparisons are made between age and sex groups when lumping 2 indices together. All results are in terms of percentages.

Findings: (1) The method of recording is consistent as indicated by perfect agreement in 85 percent of simultaneously-made observations and the recording is consistent for each index as indicated by the correlations between first 20 and last 20 observations. (2) Friendship indices increase regularly with age. Between 2- and 3-year-olds, the increase is in number of friends, and between 3- and 5-year-olds, depth of friendship (time spent with peers) increases. (3) Sex differences in friendship was small: girls had a few more friends and boys had slightly deeper friendships. Girls reached peak in number of friends earlier. (4) The Q/F decreases with age, but overall, boys are more quarrelsome than girls. Number of quarrels decreases earlier in girls. Amount of quarrelsomeness depends on makeup of the group with boy-boy groups quarreling most; boy-girl groups, intermediate; and girl-girl groups, least. (5) Quarreling is a part of friendly social contacts in the subjects since mutual friends quarrel more than average and mutual quarrelers are friendlier than average. (6) Most friendships are with same-sex peers.

Conclusions: Girls seem more advanced in social development than boys, although the causes of this are not indicated. With age, social relationships proceed from the general to the specific just as mental, motor, and physical traits appear to do. Frequent disagreements among preschoolers appear normal and natural and do not give rise to long-term feuds.

5.1.1.7 Green, E.H. Group play and quarreling among preschool children. Child Development, 1933, 4, 302-307.

Purpose: To study the interrelationship between group play and quarreling.
Subjects: Same as Green, E. H., Friendship and quarrels in preschool children. Child Development, 1933, 4, 237-252.
Procedure: Same as in other article except tally is also made of each time subject is a companion or involved in a quarrel with another subject. Reliability coefficient for this scoring by experimenter and independent observer was .84± ,034. The correlation between direct and incidental observations was .765 using Spearman-Brown, so data from these two sources were combined and used in all analyses.
Method: Subjects are compared by age and sex for number of times they play alone, play in groups of two, three, or more, argue and act passively, aggressively, or retaliatory in groups of two, three, or more.
Findings: (1) Group play increases with age and the size of the groups increases with age. (2) Three-year-olds are most quarrelsome. The most social activities occur when subjects are involved in dramatic play, whereas the most quarrelsome activity is found around sand play. (3) There is a positive relationship between friendships and quarrelsomeness.

5.1.1.8 Landreth, C., Gardner, G., Eckhardt, B., Prugh, A. Teacher child contacts in nursery schools. Journal of Experimental Education, 1943, 12:2, 65-91.

Purpose: In an attempt to go against the current trend of regarding all nursery school environments as a constant, the authors investigate teacher-child interactions in two different types of schools, private and W.P.A., and with two different age groups. Since some experimental studies (Jack, 1934; Johnson, 1935; Keister, 1937; McClure, 1936; Page, 1936) indicate that adult behavior influence children's behavior, they expect to find a similar phenomenon in nursery school adult-child contacts.
Subjects: Students in the nursery school of the Institute of Child Welfare, University of California, Berkeley; 30 children with average age 3:5; range was 2:6 to 3:11; medium IQ, 120; range 100 to 156; 75 percent of parents were college graduates. These children attended the morning session daily and were compared to 4-year-old children who attended the same school every afternoon. All these subjects were compared to subjects in a WPA nursery, though the two groups were not matched for age, social class, intelligence, length of time in nursery school, and training

and experience of teachers.

Procedure: In the University school student-teacher contacts were observed in three settings: the locker and bathroom, yard, and playroom. During a 24-day period two records were made of each teacher in each of the three situations, and the first contact in each 5-minute interval during the entire time of each nursery session was recorded. There was a total of 638 contacts. Contacts were scored on check sheets, designed by the Institute at Berkeley, that scored each contact by its situation (physical, verbal, visual, spatial) and further divided each type into specific nature: i.e., verbal--declarative, imperative, interrogative, exclamatory, social phrase.

Method: Method of contact categories included physical restraint, compulsion, guidance, assistance, and carress; positive or negative command, request, and suggestion; question; disapproval; information; and approval.

Method goal: Method goal categories include: physical care, adjustment to routine, care of own belongings, putting away toys, toilet procedures, washing procedures, use of equipment, group safety, emotional development, mental development, social development, motor development lag, facts, aesthetic development, and relationships. With much training 95 to 100 percent reliability was obtained between two observers on 142 contacts. WPA teacher-child contacts were recorded during the same hours as the University subjects had been observed and with the same number of timing of observed contacts. A total of 300 contacts were observed. This school was housed within a public grammar school, which meant arrangements were less than ideal: bathrooms far away, lots of older children about, a strong need to be quiet in the school building, and playground far away.

Design: No statistical techniques are used. Observations are coded according to the check list and comparisons between schools and age groups are made on the basis of percentages reported for each.

Findings: (1) Teacher-child contacts with 2- and 3-year-olds were 93 percent verbal, 50 percent physical, and 26 percent spatial. Contacts were usually positive and encouraging, with the most frequent methods being: giving information, offering suggestions, giving physical assistance, giving encouragement and approval, and asking questions. The teacher's main goal was to help the child adjust to routine, although she was also concerned with all aspects of development. (2) Comparisons of teacher-child contacts in three different areas indicates that the nature and goal of contacts vary with the situation. (3) Comparing 2- and 3-year-olds to 4-year-olds, there is a difference in the type of contacts with many more physical and visual contacts made to younger children. Older children were given more information and questions, but less physical assistance and guidance, fewer suggestions, commands, social phrases, demonstrations. Emotional and mental development was the main goal with older children. (4) A comparison between schools indicates that in the WPA school slightly more commands, physical compulsion, and disapproval and less information, approval, guidance, and physical assistance were given as well as fewer questions being asked. Main goals in this school were more concerned with adjustment to a "rigid routine," physical care, and demonstrative affection.

5.1.1.9 Long, B., and Henderson, E. M. Self-social concepts of disadvantaged school beginners. Paper presented at APA Meeting, New York, 1966.

Purpose: To study the disadvantaged child's perceptions of himself in relation to others.
Hypothesis: The disadvantaged child would have lower self esteem, less identification with mother, father, teacher, and friend and a less realistic self-concept in relation to size and color than would an advantaged child.
Subjects: Experimental group--36 Negro boys, 36 Negro girls. All were about to begin first grade in a rural southern community. None had attended kindergarten; all were in the Operation Head Start program. Eighty percent of the occupations of the chief earner of the household could be classified in the lowest two categories of Hollingshead's Occupational Scale. Mean number of siblings was 3.7, and 42 percent had been separated from their natural fathers. Mean Otis IQ in first grade was 90.4. Control Group--36 white boys and 36 white girls beginning school in the same community; 45 percent had attended kindergarten; 40 percent of the chief earner's occupations fell into the two lowest categories on the occupational scales; mean number of siblings was 1.6; 7 percent were separated from their natural fathers; mean Otis IQ was 110.8.
Method: The Children's Self-Social Constructs Test was administered. Self-esteem is measured by the selection of a circle from a column of circles. The higher the circle in the column, the higher the self-esteem. Realism in relation to size is measured by the selection of a circle from a group of different sized circles. Circles are also selected by subject for the father, teacher and friend. Realism in relation to color is determined by the selection of a shaded circle for Negro children and a plain circle for white children. Identification with mother, father, teacher, and friend was measured by the selection of a circle for oneself from a horizontal row of circles in which a representation of mother, etc. was placed in a circle. Identification was felt to be stronger if subject selected a circle which was closer to the circle with the representational figure of mother, etc. Each item was presented twice. Reliability coefficient ranged from .54 to .83; median, .71. In addition, each subject was rated by the teacher on 24 bipolar scales assessing classroom behavior (e.g., can work quietly, is able to play in a group, etc.). Split half reliability for the present

scale was .95. Scales were partially derived from Medinnus First Grade Adjustment Scale. All subjects in the experimental group were tested during the last week of a 7-week Head Start program. Ratings were also made at this time. Control subjects were tested 3 weeks later during the first week of school. No behavioral ratings were made.
Results: (1) When compared to the control group, the experimental group had a lower self-esteem ($p < .01$), less identification with father ($p < .01$), and a greater identification with mother ($p < .05$) and teacher ($p < .05$). (2) Within the experimental group boys were more realistic about color than girls ($p < .05$) and less identified with mother and teacher ($p < .01$). (3) On the basis of teachers' ratings, the 12 highest boys and 12 highest girls had a significantly higher self esteem ($p < .01$) and were more closely identified with the teacher ($p < .05$) than the 12 lowest boys and the 12 lowest girls. (4) Experimental subjects separated from their fathers were significantly less identified with their fathers than those subjects not separated from their natural fathers. (5) In the experimental group, larger families were significantly related with less identification with the teacher.

5, 1. 1. 10 Marshall, H., and McCandless, B. T. A study in prediction of social behavior of preschool children. Child Development, 1957, 28, 149-159.

Problem: Is the degree of a child's participation in qualitative categories of spontaneous play related to the child's sociometric score and teacher's judgment of social acceptance? Is observed social acceptance in preschool free play predicted by both sociometric scores and teacher's judgment scores? Do choices of the child's three best friends in the picture sociogram technique and in the judgment of teachers agree with those observed in play to an extent greater than chance?
Subjects: Two groups in the Laboratory Preschool at the State University of Iowa: Group I--10 girls, 9 boys; mean age 4. 2; range 3. 4 to 5. 2; Group II--9 girls, 10 boys; mean age, 4. 11; range 4. 1 to 5. 7. Occupation of fathers of all children were professional or business managerial.
Method: The Hyde and York technique for studying social interaction of adult psychotics was used for recording social behavior in free play situation. This technique made possible a record of four qualitative aspects of social interaction for an average of 3. 5 children for each of 1, 114 two-minute observations. Each person is represented by a diamond shape figure with each child's name written in the figure. The upper left side represents associative play (children seem aware of a common activity or interest). Friendly approach (verbal approach or response to another child that is neutral, pleasant, friendly, or helpful; it may be one or more words) is the lower left side. Conversation is scored if

conversation of a friendly nature occurs between two children for a half minute or more in the 2-minute observation. This is entered on the friendly approach line but here the number of seconds are recorded. The lower right side represents hostile interaction (verbal or physical approach or response that interferes with ongoing activity of another child; it may be a direct attack on another child, or it may be judged as a deliberate snubbing withdrawal from some approach of another child). The time when any child leaves or joins the group is recorded. If 1/2 minute or more time was spent with the group, then all interactions for that individual were scored. Two scores for each child were derived from this observational record: (a) play interaction score--obtained by adding the single observation scores in each category of social interaction and then dividing by the total number of minutes of observation for each child. The score for any category in a single observation was the number of children with whom the category of interaction occurred in the two minutes of observation. (b) best friend score--some of the weighted choices of the child as best friend in the combined categories of associative play and friendly approach. Best friends were limited to those three children with whom the child had the largest number of recorded interactions. This is an observational social acceptance score comparable to the sociometric score and the teacher judgment score. Order of choice was weighted as in sociometric score and teacher judgment; i.e., 5 for first choice, 4 for second choice, etc. A minimum of 100 minutes of free play observation was recorded for each child in each of three observation series (one series for Group I, two series for Group II). Observation agreement between the authors on 25 joint observations was .92 by the Festinger formula:

$$\frac{\text{sum of agreement}}{\text{sum of agreements} + 1/2 \text{ sum of omissions} + \text{sum of disagreement}}.$$

Results: (1) "The degree of a child's participation in all categories of a friendly nature in spontaneous play is positively and significantly related to the child's sociometric score and to teacher's judgment of social acceptance." (2) "Hostile play interactions do not appear to be related to children's sociometric scores." (3) "Sociometric scores and teacher judgment scores did not relate in the same way to play interaction scores for the 36 subjects. The difference between the two scores were non-significant in predicting associative play and friendly approach scores. However, the hypothesis of no differences between sociometric scores and teacher judgment scores could be rejected at .01 level of confidence for prediction of a combination score of associative play and friendly approach and at the .05 level for prediction of hostile scores." (4) "Significant relations were not obtained consistently between the best friend scores and sociometric scores for the two groups. Therefore, social acceptance in free play may be said to be moderately predicted by both sociometric scores and teacher judgment." (5) "Choices of the child's three best friends in pictorial sociometric technique and teacher judgment agreed beyond chance with those observed in play."

5.1.1.11 McCandless, B., Bilous, C., and Bennett, H. L. Peer popularity and dependence on adults in preschool socialization. Child Development, 1961 511-518.

Problem: To investigate the refinement of dependency behavior as it varies by sex and affects children's relations with their peers. Also there was interest in the relation between general adult dependency and popularity. The general postulate was that girls would show more emotional dependency (i.e., seeking comfort, support, and affection) and that emotional dependency but not instrumental dependency (i.e., asking for objective help) on adults would interfere with social relations with peers.
Subjects: University of Hawaii preschool children; 28 boys, 32 girls; 26 Caucasians, 34 Non-Caucasians (total was 60); ages 3 to 5; no mention was made of social class.
Method: (a) Teacher's judgments--four classroom teachers individually nominated the four best friends of each child (interteacher correlation of agreement = .54). (b) Free play observation (semi-formal time sample observational technique developed by experimenter prior to beginning of present study)--observation of each child in associative and cooperative play with every other child determined the best friends of each child by the amount of time spent with different children; i.e., best friends were the ones he spent the most time with. (c) Fifteen 5-minute samples of data for each child were obtained. The following observed events were tabulated for each: number of contacts made with adults, total time spent interacting with adults; number of times instrumental nurturance was solicited from adults, number of times emotional nurturance was solicited from adults, number of times child requested or threatened to request help from teacher. Reliability of categorization: authors 1 and 2 = .92, author 1 and graduate student = .65 (after discussion, reliability rose to .93). (d) Mothers were asked to describe the last two conflicts in which they had observed their child (who was involved, what their role had been, etc.). Percentage of agreement between authors in rating maternal intervention: authors 1 and 2 = .814, authors 1 and 3 = .706, authors 2 and 3 = .755.
Results: (a) Agreement between two measures of popularity, free play, and teachers' judgments, was higher for girls ($p < .05$) than for boys (not significant). (b) When the free play criterion of popularity was used, emotional dependency and popularity were significantly correlated ($p < .05$), but in a negative direction ($r = -.33$). (c) Teacher-judged popularity and emotional dependency were also significantly, but negatively, correlated ($r = -.27$; $p < .05$). (d) No sex differences were found in total or in instrumental dependency.

(e) Instrumental dependency did not interfere with popularity. (f) Mothers did not intervene more frequently in daughters' than in sons' conflicts, although girls asked teachers to solve their conflicts more frequently than boys did. (g) Girls initiated fewer conflicts but engaged in almost as many conflicts as boys. (h) Girls showed more total emotional dependency than boys, although the difference became insignificant when the category "asks teacher's intervention" was eliminated.

Conclusions: (1) Popularity and emotional dependency were found to be negatively related as were adult contacts and popularity, although instrumental dependency did not seem to inferfere with popularity. (2) Adult dependence interfered more with girls' popularity than with boys' popularity.

5.1.1.12 Moore, S., and Updegraff, R. Sociometric status of preschool children related to age, sex, nurturance giving and dependency. Child Development, 1964, 35, 519-524.

Purpose: To see if sociometric status of preschool children is related to age, sex, nurturance giving and dependency.

Subjects: 62 (31 girls, 31 boys) attending three nursery school groups of the Institute of Child Behavior and Development, University of Minnesota. Group I: 18, age 3 years, 2 months to 3 years, 10 months. Group II: 20, age 3 years, 10 months to 4 years, 11 months. Group III: 24, age 4 years, 6 months to 5 years, 6 months. (No information about socioeconomic status or ethnic background was reported.)

Method: Each subject was shown a board which contained a picture of every child in his group. Subject was asked to point to four people he especially liked and four he disliked. Experimenter then pointed to the remaining pictures one at a time, asking subject if he liked or disliked the child. This procedure was repeated twice, with 1 or 2 weeks between interviews. Reliability correlations for the three groups were significant but moderate. In addition, 41 of the subjects were observed and rated for nurturance giving behavior (i.e., offering affection, attention, reassurance, and protection) and dependency (i.e., seeking physical contact, reassurance, attention, and help).

Results: (1) Age was not related to sociometric status in any group. (2) In groups I and II, subjects significantly chose children of their same sex as positive sociometric choices and children of the opposite sex as negative choices. In group III, this relationship existed for positive choices but not for negative choices. (3) Nurturance giving was not significantly related to sociometric status in any group. (4) Dependency was broken down into two components: dependency on adults and dependency on peers. No significant relationship was found between sociometric status and dependency on peers in any group. Dependency on adults was negatively related to popularity in group I but showed no significant relationship in Groups II and III.

5. 1. 1. 13 Parten, M., and Newhall, S. M. Social behavior of preschool children. In R. Barker, J. Kounin, and H. Wright (Editors), Child Behavior and Development. New York: McGraw Hill, 1943. 509-524.

Purpose: To study leadership tendencies and degree to which preschoolers differ in their participation in social activities. These results are also reported by Parten in Journal of Abnormal Social Psychology, 1932 (27), 1933 (27), 1933 (28).
Subjects: 42 2- to 5-year-olds attending University of Minnesota nursery; 22 boys, 20 girls; IQ ranged from 81 to 145, average "well above 100." Subjects were of all social classes but predominantly from professionals' homes; average age was about 3 years 6 months.
Procedure: Subjects were observed in indoor free play every morning from 9:30 to 10:30 during a 4-month period. Two teachers were present but had a minimum of contacts with subjects; all toys were accessible to the subjects without assistance. There were a few adult-directed activities: painting, making valentines, washing dolls, to which subjects voluntarily came. Each subject was observed for 1 minute on each of a number of days with the periods of observation systematically scattered throughout the hour. All observations were done by Parten, though four unititiated assistants did observe 16 subjects with her, and reliability for these studies ranged from 86 percent to 92 percent. No other reliability tests were done. Six categories of social participation scored: (1) Unoccupied behavior--subject not playing, but watching self, others, any momentary interest about him--scored 3. (2) Solitary play--subject plays alone and independently with toys different from those being used by subjects within speaking distance, and subject makes no effort to speak to peers--scored 2. (3) Onlooker behavior--subject spends most of his time watching other subjects play; he may question or talk to the playing children, and he notices all they do--scored 1. (4) Parallel play--subject plays independently, but play he chooses naturally brings him among other children; plays with same toys as those about him are using, though he may be using them in a different way--scored 1. (5) Associative play--subject plays with other subjects; subject borrows and lends materials; no hierarchy of control or power; each subject does as he wants--scored 2. (6) Cooperative or organized supplementary play--subject plays in a group organized for a purpose by 1 or 2 subjects, division of labor and tasks--scored 3.
Degrees of leadership scored: (1) Following what another subject suggests, scored -2. (2) Not directing or following but pursuing own goals, scored -1. (3) Both directing and following, sometimes doing one, sometimes the other, scored 1. (4) Reciprocal

leadership with another subject--either both direct together or alternate being leader, scored 2. (5) Directing group singly and unassisted, scored 3.

Design: Teachers' estimates of the leadership and social participation behavior of each subject were secured from the five school staff members who had spent varying amounts of time with the children. They were given the categories described above and rated each subject relative to every other subject. Their estimates of what a subject's percentage was on each category times the score for that category was correlated with the score experimenter obtained for each subject on each item. Experimenter's score was the number of times child was observed in a category times the score for that category.

Findings: (1) Overall, unoccupied, and onlooker behavior were the least frequently observed social categories. Children who ranked high in one of these were also usually high in the other. Parallel behavior was most common and seen in all children at some time; associative behavior also occurred very frequently. Cooperative and solitary behavior were intermediate in frequency. (2) Older children usually played in parallel and associative and cooperative groups more than other subjects, were never unoccupied, and were rarely onlookers or solitary. The relationship found between age and type of social behavior is not explained by years in nursery school since correlation between social participation and years in nursery school is .12. (3) A correlation of .26 ± .11 indicates some relationship exists between social participation and IQ; a correlation of .69 ± .06 between IQ and parallel play is unusually higher and believed to reflect the high frequency of parallel play about the sandbox among the most intelligent 2-year-olds; this explanation is also supported by the inverse relationship between solitary play and IQ, with young children doing the most solitary play. (4) Among the leadership scores, directing and following and following and directing were least frequent. Independent pursuit of own ends was most frequent and followed by reciprocally directing. (5) Two types of leaders were observed among the subjects: the artful leader who ably directed 20 different children in 20 observations and the brute-force leader who directed 3 children in 20 observations. The former tried actively to increase the number of followers, whereas the latter did not and even closed his group to others. (6) Independent pursuit declines steadily with age. Directing and following appears for the first time in 3-year-olds and does not change frequency with age; reciprocal leadership reaches its height in 3-year-olds and replaces the independent behavior that is fading by this time. Directing activities are most frequent in the oldest subjects. The correlation between age and neither following nor directing (-.79) and the correlation (.53) between age and directing are statistically significant and indicate the influence of age upon level of leadership qualities. However,

a correlation of .67 between height and leadership and of .92 between age and height indicates that age is not the essential factor influencing leadership. (7) The correlation between leadership and intelligence (.34 ± .10) indicates that leaders may be more intelligent than average. (8) The correlation between social participation and leadership is .97. (9) A comparison of teachers' ratings and some parent ratings of subjects on the leadership and social participation dimensions with the experimenter's ratings had correlation coefficients of .59 to .83.
Conclusions: The author considers the above findings valid only for preschoolers with a background similar to subjects.

5.1.1.14 Stith, M., and Connor, R. Dependency and helpfulness in young children. Child Development, 1962, 33, 15-20.

Purpose: "The present study was designed to explore and compare helpful and dependent behavior in young children in order to discover whether the frequency and proportion of helpful and dependent acts were independent of the age and sex of the subject and whether the frequency and proportion of choice of adults or children as recipients of helpful and dependent contacts were independent of the age and sex of the initiator. Also, the investigation sought to discover whether older children seek to satisfy dependence needs in a different fashion than do younger children."
Subjects: 30 boys and 35 girls ranging in ages from 38 to 75 months, enrolled in the Child Development Nursery School and Kindergarten of Florida State University. No information about socioeconomic background was given.
Method: Twenty 2-minute observations, according to an established order, were completed on each child. Behavior was divided into seven categories of helpful (offering information, giving help, giving reassurance, giving permission, giving praise, giving affection, and giving reward) and seven categories of dependent behavior (seeking information, seeking help, seeking recognition, seeking praise, seeking affection, seeking reward, seeking permission). Observer reliability "reached 98 percent before the collection of data was begun."
Results: (1) "No consistent relationship between frequency of total behavior and age was observed. Although boys exhibited greater frequency of observed behaviors than girls at every age level, the relation of frequency of behavior to sex was not statistically significant." (2) "There were no over-all relations between either frequency or proportion of helpful or dependent behavior and the sex of subjects." (3) "There was no significant relationship between the frequency or proportion of choices of adults on children as recipients of either helpful or dependent behavior and the sex of the initiator." (4) "Helpful behaviors per child increased and dependent behavior responses per child decreased as

age increased" ($p < .05$). (5) "The proportion of contacts with adults decreased while the corresponding proportion of contacts with children increased with age" ($p < .05$). (6) The proportion of dependent contacts with adults decreased significantly ($p < .01$), while the proportion of helpful contacts with adults increased significantly with increasing age ($p < .05$). (7) "There was an increase in both helpful and dependent contacts with children in relation to the age of the subject making the contact, but the increase of helpful contacts only was significant" ($p < .05$).

5.1.1.15 Waldrop, M.F., and Bell, R.Q. Relation of preschool dependency behavior to family size and density. Child Development, 1964, 35, 1187-1195.

Problem: The authors hypothesized that boys between the ages of 2 and 3 years who came from large, congested families would initiate more contact with their female nursery school teacher. It was felt that the large size and density of the family reduced maternal availability, which would increase anxiety in the child and would constitute a deprivation situation for his dependency drive.
Subjects: 44 boys, age 2 to 3 years, attending nursery school for 1 month. Average number of children per family was 3.9 (range 2 to 8). Average time between births in the families was 26.54 months. No information about socioeconomic status was given. Children were selected on the basis of scores on retrospective questionnaires filled out by mothers comparing the subjects' first months' behavior with that of another sibling of the same sex. Subjects were selected if they were extreme (i.e., the upper or lower 1/3 of the frequency distribution) on two factors: oral and skin-sleep.
Method: Direct observations of each subject while attending the nursery school were made. The two teachers, male and female, rated each subject each day on a variety of scales. In addition, an independent observer went to the child's home and rated the mother on "maternal initiation of contact with the child."
Results: (1) A significant positive relationship was found between the density of a subject's family and the amount of contact he initiated with the female teacher. (2) A significant negative relationship was found between the mother's availability in the home and the amount of contact initiated by subject with the teacher.

5.1.2 ENVIRONMENTAL

5.1.2.1 Henry, M.M., and Sharpe, D. Some influential factors in the determination of aggressive behavior in preschool children. Child Development, 1947, 18, 11-28.

Purpose: The purpose of this study was to discover the possible relationships between factors of age, sex, and gross environmental

conditions and both the frequency and types of aggressive behavior and the techniques of responses to aggression. Preschool children from two American nurseries were observed in standardized experimental conditions. Also, case studies of individuals were made to gain insight into possible influences of personal experiences, needs, and qualities in producing patterns of aggression.
Method: Subjects were 30 preschool children ranging in age from 2 years 10 months to 5 years 4 months at the time of the initial observations. There were two groups tested separately: 12 subjects of middle and upper middle socioeconomic status) attended a college nursery that was nonrestrictive and encouraged expression and creativity; 18 subjects of upper-lower and lower-middle socioeconomic status attended a city nursery that was restrictive and encouraged discipline and regimentation. Observations were made of two experimental play situations, controlled for children present and play materials available. Subjects were observed in pairs controlled in situation "A" for sex and in "B" for age. In "A," each subject was paired with every other same-sex subject in his school group. In "B," each subject was paired with every other subject within a 9-month age difference (except one case of a 13-month difference). "B" included 15 girl-girl sets, 13 girl-boy sets, and nine boy-boy sets. Experimental situation lasted 15 minutes with no adult intervention except to stop physical injury; two adults were present in room making simultaneous reports of all social interaction, using stopwatches to record spread of interactions (percentage of agreement of observers: 82.3 for "A" and 81.6 for "B"). The records were analyzed for social interaction, aggressive behavior, and responses to aggression; agressive behavior was identified according to specific techniques categorized after preliminary study of records; two persons scored each record independently according to categories of aggression and responses to aggression (percentage of agreement: 92.8).
Findings: Significant trends in relation to age: rank order correlation +.54 between aggressions and age in same sex pairings ("A"); types of aggression varied with age of aggressor and playmate; frequency with which one child gave directions for behavior of another correlated +.58 with age; older children made verbal demands on younger children in twice as high a proportion of total number of aggressions as younger children in same pair; younger children exceeded older in total number of aggressive grabbings for material; children grabbed more with age equals than those younger or older; correlation of +.24 between frequency of aggressions and number of intervals spent in social interchange. Sex differences in frequency of aggression: Trend for boys to be more aggressive than girls ("B": mean number of aggressions for one experimental period, 4.62 for boys and 2.30 for girls, significance of difference is 1.36); boys more aggressive with boys; girls more aggressive with boys. Sex differences in response to aggression: Tendency

of boys to have more active responses, girls to have more passive responses. For boys, most frequent response: counter aggression; second most frequent response: active resistance; for girls, most frequent response: active resistance; second most frequent response: verbal resistance. Comparison of children in two nursery environments: In equivalent periods of observation: city school--133 minutes of social interchange and 58 aggressions; college school--189 minutes of social interchange and 131 aggressions. Difference between aggression scores were proportionately greater than difference between social interchange scores.
Conclusions: "The findings of this study are in agreement with those of earlier studies concerning the tendency for aggressive responses to increase as children grow older within the preschool period and also concerning the tendency for boys to play a more aggressive role in social interchange than girls... For some children frequent aggressions were a part of a whole fabric of vigorous social participation, while for others aggressiveness stood out as a more dominant response in their social behavior and seemed to have a compulsive quality... The findings of this study point out the need for supplementing generalizations in the interpretation of aggressive behavior with intimate knowledge of the environmental background and social experience of individual children."

5.1.2.2 Hoffman, M. L. Parent discipline and the child's consideration for others. Child Development, 1963, 34, 573-588.

Purpose: To relate parental discipline and acceptance of the child to the development of a child's consideration for others.
Hypothesis: Parental acceptance of the child, discipline which highlights the consequences of the child's behavior, and discipline which is explicitly oriented to the needs of others would be positively related to the child's consideration for others. Also, parental acceptance would be positively related to the child's general affective orientation and friendliness.
Subjects: 12 middle class and 10 working class families whose children attended a half-day nursery school in Detroit. No information was given about means of subject selection or socioeconomic classification.
Method: During a taped interview session, each mother reported her interactions with her child on the previous day. From the tape, the interactions were coded for parental acceptance, discipline which highlighted the consequences of the child's behavior, and discipline which was explicitly oriented to the needs of others. Also, three half-hour running account observations of each child as he behaved in the nursery school were taken. From this record two scores were derived for each child: (1) consideration for others--expressing sympathy, aiding another child in distress, or showing

awareness of and consideration for another child's needs even when they conflict with subject's; (2) positive affective orientation--positive interaction with peers initiated by subject (e.g., hugging). Coders reached 90 percent agreement before coding the interview and observation records.

Results: The findings did not support the hypothesis with one exception: parental acceptance in the working class group was significantly related to the child's positive affective orientation ($p < .05$). The author regrouped his subjects into a low power-assertive group and a high-power assertive group (power assertive referring to the use of demands, threats, and physical force with no explanation or attempt to compensate the child for having to alter his behavior against his will). The experimenter felt that his original hypothesis would hold up in the low power-assertive group. This was based on the results of a previous study (Hoffman, "Power assertion by parent and its impact on the child") which found that children of high-power assertive parents have heightened autonomy needs and are more aggressive. The experimenter felt that these characteristics would interfere with the assimilation of the content or meaning of the parental discipline and would consequently effect the development of consideration for others. This hypothesis was supported by the findings. Parents were also assigned a score for love-with-holding discipline. In the low-power assertive group, parents who were assigned high love-withholding scores had children who exhibited more hostility in their behavior and sought more nurturance from adults. In the high-power assertive group, only the negative relationship with hostility was evident.

5.1.3 MEASUREMENT AND TECHNIQUES

5.1.3.1 Loeb, J. The incentive value of cartoon faces to children. Journal of Experimental Child Psychology, 1964, 1, 99-107.

In conjunction with ideas in current child rearing practices, approval is thought of as a positive reinforcement and disapproval, as a negative one. The purpose of this study was to investigate the possibility of cartoon faces as social stimuli and to determine the relative incentive value of faces designed to communicate approval, disapproval and neutrality. The stimuli used were simple line drawings, with the idea of minimizing sexual identity and individual characteristics. Subjects were 32 children from Dallas Day nurseries, equal by sex, by age (half 4's, half 5's), and from a working class background of European or Mexican parentage. Apparatus involved four switches which could light any of the three faces or a blank. A timer recorded response latency (time from onset of signal light to when the switch was pulled), and experimenter recorded which switch and the response latency, for each child, for 40 trials.

Subjects were shown a tray of 10-cent toys before the task or game and given one afterwards. A followup 2 weeks later asked how the person in each of the pictures felt, and which picture subject liked most and least.
Results: The response frequencies of each subject to each picture were ranked (Friedman 2-way ANOVA) and showed statistically significant differences ($p < .05$). The smiling and the frowning faces were chosen significantly more times than the blank or the neutral face. In a breakdown of data, initially both boys and girls more frequently chose the smiling face; and, while the girls maintained this pattern, the boys began more frequently to choose the frowning face ($p < .10$). When asked to describe the faces, quite different terms were used for the smiling, frowning and neutral faces: smiling, as pleasure; frowning, as displeasure; and neutral, contrary to expectation, in terms of definite emotional state, mostly as pleasureable. The smile was most liked and the frown the least liked of the pictures ($p < .001$). Within the range available, subjects seemed to select the greatest degree of affect. The frown did not seem to act as a negative reinforcer as predicted, but did have more incentive value for boys than for girls. A couple of hypotheses from Freudian theory were suggested for interpreting this data; i.e., that by repeated exposure the child has an opportunity to control an unpleasant situation and perhaps master it in some way and that the disappearance of the faces may have had a great deal of positive reinforcement value. A few questions raised within the study included what emotions the faces communicated to the children about themselves and how representative the group of children were.

5.1.3.2 Longabaugh, R. A general purpose category system for coding social interaction. Unpublished manuscript; Laboratory of Human Development, Harvard University.

Problem: Measuring mother-child dyads in an unstructured situation.
Assumption: Social behavior between people is an attempt to gain from others what the self values and the other possesses.
Subjects: 51 mothers, each bringing one child (selected by experimenter); criteria for selection of mothers was Negro, lower class, origin either in the south of the United States or the island of Barbados in British West Indies. The group of children consisted of 28 boys and 23 girls, age range 5 to 12 1/2; no criteria for their selection was given. Location: Cambridge, Massachusetts.
Procedure: Experimenter shows mother and child into waiting room and leaves them alone. Mother is asked to fill out a questionnaire on the child's dreams (should take about 3 minutes); then experimenter waits about 5 minutes more before entering and beginning the experiment for the subjects (a duck shooting game and a word game, which is the Osgood Sematic Differential modified for use

in this study).
Method: Observer recorded interaction in a coded form. An act first had to be judged a social act (i.e., intent of acting as a stimulus for a response). There were 19 categories of behavior, six modalities (seeking, offering, depriving, accepting, ignoring, and rejecting), and three resources (control, support, and information). Each modality is paired with a resource.
Analysis: (1) Scores were combined by the construction of indices of resource exchange. The operational measure of exchange was the rate of resource acceptance of both members for the time observed. Resource acceptance equals the sum of the resources offered by A to B and the sum of the resources offered by B to A minus the sum of the ignorals and rejections of resources offered by B to A and by A to B. (2) Indices of interaction were related to four independent measures: (a) household structure; (b) mother and child scores on Semantic Differential; (c) age of child; (d) sex of child.
Findings: (1) When the father was absent from the home, the mother-son relation was more intense than when the adult male was in the home; dyadic interaction was more often higher ($p < .01$); rate of resource exchange was greater ($p < .05$), particularly the rate of support ($p < .02$). (2) When the father was absent from the home, the mode of interaction between the mother-daughter dyad was likely to be less ($p < .05$). (3) A child was likely to see the mother as highly potent when she most exceeded him in deprivation of all resources ($p < .05$), especially support deprivation ($p < .01$). (4) Older children had a greater share of the distribution of all resources than did younger children ($p < .02$). (5) Sex is unrelated to support exchange, but sex and age together are significantly related; i.e., a young boy and mother exchange more support than a young girl and mother ($p < .02$) or older boy and mother ($p < .01$); an older girl and mother exchange more support than an older boy and mother ($p < .05$).

5.1.3.3 Longabaugh, R. Measuring mother-child dyads in an unstructured situation by the interaction chronograph. Unpublished manuscript; Laboratory on Human Development, Harvard University.

Problem: Measuring mother-child dyads in an unstructured situation by a interaction chronograph.
Subjects: 51 mothers each bringing one child selected by experimenter. Criteria for selection of mothers: Negro, lower class, origin in the south of the United States or island of Barbados in the British West Indies. The group of children consisted of 28 boys and 23 girls; age range 5 to 12 1/2; no criteria for selection was given. Location: Cambridge, Massachusetts.
Method: Three observers--one uses chronograph. Chronograph: observer has two keys which he presses when a person initiates

social interaction. When the action is terminated, the key is released and he has a record of the frequency and duration of each person's actions and silences. There are four possible events: A is acting, B is silent; B is acting, A is silent; both A and B are acting; both A and B are silent.

Procedure: Experimenter shows mother and child into waiting room and leaves them alone. Mother has been asked to fill out a questionnaire about the child's dreams (should take about 3 minutes). Then experimenter waits 5 minutes more before entering and beginning the experiment for subjects (i. e., duck shooting game and word game). The word game is the Osgood Semantic Differential, which has been modified for this study.

Results: Some of the most pertinent findings reported by the author were: (1) The more often the mother interrupts the child, the more often the child interrupts the mother ($p < .01$). (2) The more often the mother interrupts the child, the more likely the child is to outlast the mother when she interrupts him ($p < .05$) and when he interrupts her ($p < .05$). (3) For the total time observed, mother's tempo is positively related to child's tempo ($p < .05$). If the tempo of one member is quick, the other member's tempo tends in the same direction. Tempo is average time between the beginning of sequential responses of one member. (4) The longer the mother's actions, the slower the child's tempo. (5) Child is not affected by how quickly mother responds to him ($r = .06$). The author concludes: Child's tempo would seem to be primarily a function of how long mother acts and how long child is likely to be quiet following an act of the mothers. Mother is the primary force responsible for her own tempo, the dyadic tempo, and to a lesser extent the child's tempo. The length of her own actions and her latency in responding to herself and to her child are the primary determinants of tempo. The child is a factor in tempo only by his quickness in responding to his mother's actions. (6) If the mother tends to act successively, the child does not ($p < .01$). "This indicates that in dyads successive responses were specific to one of the two members permeating the dyadic interaction."

Part II

Method: Experimenter did a factor analysis of the above data.

Results: (A) The factors found were: (1) mother contingent activity which was most closely related to mother's pace of acting; (2) relative dyadic contribution; (3) dyadic interruptions. (B) Factor I is related to the child's perception of the mother's potency and also to the absence of the father in the mother-son dyad; the more likely the child saw the mother as potent, the more likely the dyad was high in factor I ($p < .01$). This factor was not related to age or sex of the child nor to mother or child's self-rating in potency and evaluation on the Osgood Semantic Differential. (C) Factor II failed to be significantly related to any criterion variables.

(D) Factor III was not significantly related to age but was associated with both mother and child. If the dyad was high in factor III, both mother and child were more likely to see themselves as very good. (p .05).

5.1.3.4 Stevenson, H. W., and Stevenson, N. C. A method for simultaneous observation and analysis of children's behavior. Journal of Genetic Psychology, 1961, 99, 253-260.

Purpose: Because observational records of children's behavior are difficult to quantify and time-consuming in obtaining, the author's have developed an instrument that permits simultaneous observation and analysis of material. This paper reports several uses of their instrument and the results obtained.
Subjects: For the reliability study, subjects were five male and four female, ages 3:5 to 4:7 in University of Texas Nursery; the second study used five male and five female, ages 3 and 4 in University of Texas Nursery and four male and three female, ages 3 to 6 who attended a nursery for mentally retarded children with mental ages from 1 1/2 to 3.
Procedure: All subjects were observed by three college seniors well trained in using the new instrument that divides behavior into BU's. A BU is created by certain conditions: (1) An observable change in environment produces change in subject; i.e., Paul hits subject and subject hits back. (2) An observable change in environment followed by no observable change in subject; i.e., subject hits Mary without provocation. Once a BU occurs, the experimenter then further defines it as being either: (1) Social Participation (SP)--when subject interacts or has chance to interact with peer; three levels of SP on which BU is scored are interaction between peers, attentive to peers (i.e., onlooker or paralleled behavior but no direct communication between peers), noninteraction with peers (i.e., subject in individual and isolate activity, withdrawn). (2) Contacts with adults (CA)--all behavior in which subject focuses his attention primarily on an adult even though peers may also be involved. Experimenter observes and analyzes behavior on a check list without ever recording any BU's verbatim. For the reliability study four 5-minute observations were made on subjects over a 2-week period during free play by all subjects simultaneously. For the second study each subject was observed by all experimenters, but one at a time, during 5-minute periods at free play; all observations were randomized throughout the play period.
Design: In the reliability study the simultaneous observations of three experimenters were compared for agreement using "W. Kendall's coefficient of concordance" and tested for significance. The second study compared using Festinger's "d" test--the mentally retarded and second group of normal subjects and the two groups of normal subjects.

Findings: (1) The level of agreement in categorizing BU's among experimenters in the reliability study is .89 to .94. A W. test applied to these observations for each category is highly significant with a coefficient of .80. (2) Comparing mentally retarded subjects to second group of normals, the mentally retarded had a significantly ($p < .01$ to $p < .05$) lower proportion of interactive SP and a significantly lower proportion ($p < .01$) of attention to peers SP; mental retardates had a significantly ($p < .01$) high proportion of contact with adults. No group differences in total number of BU's were observed. (3) When analyzed by sex, the normal boys had a significantly ($p < .01$) greater proportion of interactive play. Girls have proportionally more interactions with adults, but the difference is not significant. No sex differences in total number of BU's were observed.

Conclusions: The BU method of analysis permits experimenters to observe and analyze more behavior/observation than written records do. Behavior is recorded in terms of each subject's activity level and gives a count on social interactions within activity level, but experimenters must be specially trained to observe, analyze, and rate rapidly changing behavior, and it takes intense concentration for short periods with the time determined by the frequency of the behavior sought. The use of the above categories with longer observation periods is not advised because the categories are so broad.

5.2

SEX-ROLE IDENTIFICATION

5.2.1 NORMATIVE

5.2.1.1 Hartley, R.E. Sex roles from a child's viewpoint. Speech at annual meeting of American Othopsychiatric Association, San Francisco, April, 1966.

Purpose: The purpose of this speech was to present the findings of several studies investigating the development of children's concepts of sex roles. The main interest was in studying girls' perceptions of female roles that would give information about difficulties implicit in the adult female role for American women today.
Subjects: Subjects are 157 children--47 boys and 110 girls--of the following ages: 5 years old--23 subjects, 8 years old--63 subjects, 11 years old--71 subjects. Children of working and nonworking mothers were evenly represented, and there was an even division of subjects from all social classes among the 8- and 11-year-olds. Most of the 5-year-olds were from upper-middle class homes, with class being defined by the vocational and educational attainments of the parents. Excluded from the sample were children of recent immigrants, with marked problems, or from minority groups with distinctly different sex role patterns from the majority culture.
Procedures: A wide variety of pictorial and projective techniques as well as straight interviews with the subjects were used. The pictorial materials included everyday objects which the subject told a story about and indicated which sex used them most; pictures in which adults of each sex were doing different activities and the subjects were asked which they would like to do and why; pictures of parents leaving children and the subjects were asked what each parent would feel in this situation, why, and where the adults were going. The projective questions asked subjects to describe life on earth for men and women to a visitor from Mars and to tell how they would feel as a parent about to adopt a child. Each instrument was designed to test a specific hypothesis and the complete battery required from 30 to 60 minutes. Each child was always seen alone. Lengthy interviews with 90 mothers and 20 fathers were conducted.
Design: All responses were analyzed using chi-squares testing the relationship of the most frequent response to all other answers. All significance levels are $p < .05$ or better.
Findings: (1) Overall, children describe adult sex roles in a very traditional view with the man at work and the woman at home,

significant at $p < .05$, but there are some distinctions among groups. The sons of working mothers more frequently mention work roles for women, but there is no difference between the daughters or working and nonworking women. Lower class boys, regardless of mother's work status, mention men doing domestic work significantly more frequently than lower class girls or upper-middle class boys. This difference between boys of different classes is greater than the significant difference observed between sons of working and nonworking wives when describing domestic chores men do. (2) Overall, the 8- and 11-year-old girl subjects indicate they like 3/4 of all the objects and activities designated feminine by the subjects, dislike 11 percent designated feminine (ironing, washing) and 76 percent designated masculine (fixing cars), and like 9 percent designated masculine (hiking, being a doctor). Girls categorized as masculine by their earlier responses like more masculine items than those subjects designated feminine. (3) The subjects think women dislike work more than men, although more boys than girls believe men dislike work. They all believe women would rather be at home with their families and the men would rather "go fishing, to a ballgame, have a good time." (4) A significant positive correlation ($r = .34$) was found between anticipated acceptance of women's role-behavior and anticipated liking for masculine activities, indicating that liking one role does not necessitate rejecting the other. (5) Between ages 8 and 11 the girls increase their preference for items of a feminine nature and reject masculine ones, all going in the direction of traditional femininity and upper class occupations for women. (6) Overall, the boys mention significantly more items at an earlier age that are for either girls or boys, indicating greater awareness of sex-appropriate behavior and goals. (7) A disagreement emerged when significantly more girls said they plan to work after marriage than boys who said they thought their wives would work. (8) Lower class girls are more service oriented and positive about home and work responsibility and significantly more sure they are the preferred sex at home than upper-middle class girls. (9) The daughters of working mothers perceive significantly less frustration in the woman's role assignments and view women as having more interests and fewer restrictions upon them. The girls also indicate that their fathers are significantly more interested in having female offsprings than subjects with nonworking mothers indicated. (10) Single subjects reacted in one of four patterns to male sex role pressures: (1) "Overstriving with explicit hostility expressed against the opposite sex and marked rigidity of differentiation between male and female." (2) "Overstriving with less hostility but marked rigidity." (3) "A tendency to give up the struggle, with protest against societal expectations." (4) "A well-balanced positive role implementation of the male role, showing clear differentiation between concepts of male and female role but with understanding of complementary relationships between the roles and marked flexibility in relation to activities assigned to them." Conclusions: (1) Much more developmental investigation of male role adjustment is needed since these results concern normal children and the boys indicate anxiety about adequacy, inflexibility, hostility, and suspicion that can be disturbing to them throughout life; in fact, perhaps what society considers normal for the male role must be questioned. (2) The effect of working mothers seems to be one of a healthier family situation as measured by attitudes of fathers, daughters, and sons. (3) The so-called bad effects of education upon upper-middle class women cannot be rightfully attributed to education at the college level, as it has been, since there is much dissatisfaction in these girls long before they enter college. In these subjects, it is possible to say they have problems because their mothers are college graduates. (4) There does not seem to be any widespread neurotic preference by women for the male sex role and male activities or male son, nor does there seem to be the antecedents of widespread neurotic rejection of the feminine role by women as has been stated at various times. (5) Positive and receptive people like many things, both male and female. They work and have families and like both of them, so a healthy living of a sex role involves an attraction and involvement in each role to an extent, but anything that is clearly perceived as masculine is shunned by the female so she is not involved in conscious cross-sex intrusion.. The author assumes those subjects who express this feeling will develop into healthy adults.

5.2.1.2 Hartup, W., Moore, S.G., and Sager, G. Avoidance of inappropriate sex-typing by young children. Journal of Consulting Psychology, 1963, 27, 467-473.

The purpose of this study was to assess young children's avoidance of sex-inappropriate objects unconfounded with preferences for sex appropriate objects in order to determine avoidance of inappropriate sex typing. It was hypothesized that such avoidance would be positively correlated with age and also with the presence of an adult and that avoidance of inappropriate sex objects would be positively correlated with appropriateness of sex typing as measured by ITSC. Subjects were 69 boys from the University of Minnesota laboratory school and 78 girls from the laboratory school at the University of Iowa. Within each of these sex groups, four subgroups were formed: (1) young nursery school children (approximately 3-2 to 4-4), (2) older nursery group (4-5 to 5-2), (3) young elementary school group (5-5 to 6-11) and an older elementary group (7-0 through 8-2). These schools usually enroll middle class Caucasian children of higher than average intelligence. Random assignment of subjects within each of the eight groups to two experimental conditions (experimenter present or experimenter absent) was performed. Male subjects were presented with a group of feminine toys (selected by the authors as distinctly feminine) and a group of neutral toys. Females were presented with an arrangement of masculine toys (selected on the basis of ratings by a group of teachers, parents and graduate students) and a group of neutral toys. The neutral toys were purposely selected to be less attractive than the alternative inappropriate toys for each group. Observations were made by a concealed observer every 15 seconds for a total of 13.5 minutes (first with an examiner present and then with no examiner present). Looking, touching and proximity to toys were the variables observed, and latency scores (number of intervals elapsing before subject was observed to look at, touch or approach an inappropriate toy) were computed. Percent-inappropriate scores were derived from the number of intervals in which the subject looked at, touched or was near an inappropriate toy. Observer reliability was checked and found to be 94 to 97 percent for latency scores and 82 to 97 percent for inappropriate scores. The ITSC was administered to each subject within 4 weeks of the experiment runs. Because the individual latency and percent-inapproriate scores were highly interrelated, the average of the two scores used in the analysis of data were summary scores. The latency score then became the mean of the three individual latencies (looking, touching and proximity) and the percent-inappropriate score became the mean of the three individual percent inappropriate scores. The Kruskal-Wallis nonparametric analysis of variance was used because of nonnormality of all distributions except the female percent-inappropriate one. The findings indicate that latency increases with age for boys ($p < .05$) and that their latency is longer when the examiner is present ($p < .01$). Neither age nor examiner presence significantly affected girls' latency scores (H=5.83, df 3; H=2.46, df 1, respectively). Age effects were in the same direction as that of the boys but not significant ($p < .20$). Younger boys had higher percent-inappropriate scores than older boys ($p < .05$), and the same age relationship helf for girls ($p < .005$). Examiner presence had no effect on any of the percent-inappropriate scores. The ITSC scores were correlated with the avoidance measured separately according to school grouping (nursery school and elementary school groups), but no significant effects were observed. Conclusion: The authors conclude that avoidance of inappropriate-sex objects increases with age. They suggest that entrance to elementary school increases avoidance of inappropriate-sex activity and that this may be related to increased peer, teacher and parent pressure. They also state that examiner presence increases avoidance for boys only and they posit a sex difference in sensitivity to the presence of an authority figure. From the lack of a significant relationship between avoidance measures and the ITSC, they conclude that sex typing is not a single dimension and they question the validity of the ITSC for girls. They note that a puzzling finding occurred in that the girls' ITSC scores were heavily skewed in the direction of masculinity (29 of the 44 elementary school girls had extreme masculine scores).

5.2.1.3 Hartup, W. W. and Zook, E. A. Sex - role preferences in three-and four-year-old children. Journal of Consulting Psychology, 1960, 24, 420-426.

The purposes of this research were to offer norms of sex role preferences for 3- and 4-year-old children and to study the effects of verbal instructions that stressed varying amounts of similarity between the subject and a test figure drawing on the It Scale for children. A 3-year-old sample (3-0 to 4-0) of 65 children and a 4-year-old sample (4-0 to 5-0) of 96 children were drawn from four nursery schools in Iowa. These nursery schools were representative of different socioeconomic groups in that one was a community supported day care center, two were cooperative nursery schools, and one was a university laboratory nursery school. The final sample (after dropping 11 cases to insure proportionality of cell sizes) consisted of 70 girls and 80 boys. Assignments of subjects from each school to three experimental groups was random except for matching for sex and age. Treatment in the experimental groups was on the basis of differential instructions for the ITSC, with Group A being given the instructions designed by the test author (Brown, 1956), with the test figure having low similarity to the subject; Group B given instructions which indicated that the drawing was a child of the same sex as the subject; and Group C given instructions which referred to the test figure by the subject's own name. Scoring was performed according to Brown's scheme with female choices given a "O" score and male choices given a positive score. A reliability check on the use of this test with 3- and 4-year-old subjects was performed with 40 subjects after a 60.6 day interval and the test was found to be reliable for both boys ($r=.66$, $p<.01$) and girls ($r=.71$, $p<.01$). A three-way classification ANOVA revealed that the effect of instruction and age were not significant, but the effects of sex and the interactions of instruction + sex and age + sex were significant (at the .001, .005, and .001 levels respectively). Tests of significance showed the age difference for girls to be significant at the .001 level ($t=3.925$) and the age difference for boys to be of only borderline significance ($t=1.84$, $p<.10$). Girls showed more feminine preference when the instructions called the test figure either "a little girl" ($t=3.32$, $p<.01$) or the subjects name ($t=2.637$, $p<.01$). Boys showed more masculine responses when the instructions called the test figure by the boy's name ($t=2.019$, $p<.05$). The authors concluded (1) that some aspects of sex role differentiation begin very early in life, (2) that a sex difference in the degree of appropriate sex role preference exists with boys preferring the stereotyped masculine role more strongly than females prefer the stereotyped feminine role at the age of 3 and 4 (they state that the acquisition of sex role preferences by the male is less complicated than the same task is for the girls), and (3) that the It Scale is highly sensitive to variation in instruction.

5.2.1.4 Lansky, L.M., and McKay, G. Sex role preference of kindergarten boys and girls: some contradictory results. Psychological Reports, 1963, 31, 415-421.

The purposes of this research are (1) to determine whether previous research conclusions which state that "girls tend to prefer the masculine role more than boys prefer the feminine role" are tenable and (2) to test the assumption of previous researchers that the It figure in the ITSC test is seen as male by most children. The authors hypothesize that in today's society with changes in the female role, males have greater preference for the feminine role than girls do for the masculine role. Subjects for this experiment were 20 boys and 16 girls from 60 to 72 months of age enrolled in a private kindergarten in a suburb of Boston, Massachusetts. The socioeconomic class was "professional" or "semi-professional and managerial" for 94 percent of the subjects according to the Minnesota Scale for Parental Occupations. Although the data reported here were part of a larger study including use of the Franck Drawing Completion Test and the author's Sex Role Attitude Test (SRAT), only data from two administrations of the ITSC are presented. In the first administration the figure "It" was concealed in an envelope and the subject was asked to choose between sets of pictures of sex-linked objects for "It." He then was asked to guess whether "It" was a boy or a girl. In the second ITSC administration the "It" figure was visible. The test was administered according to manual directions in both cases with the exception of the concealment and the subject's guess as the sex of the figure.
Results: With the "It" figure concealed, the means and variances were significantly different for the sexes, with boys more masculine and more variable (t test significant at $p<.002$ and F test significant at $p<.001$ levels). The distribution was rectangular for the boys but skewed in the male direction for the girls. In the guesses as to the sex of "It," boys were more flexible and were more willing to call "It" female than girls were to call "It" male. The t test was used and showed that the mean ITSC score for boys who guessed "It" was a girl were significantly less masculine than the scores for the boys who guessed "It" was a boy ($p<.002$). For the second administration of the ITSC there was no significant difference in variances, but a division of scores for each sex at the median showed the association for boys between more masculine test scores and guess of "male" for the "It" figure and more feminine test scores and guess of "female" for the "It" figure ($p<.003$).

There was no significant tendency for either sex to guess "boy" more than "girl." In fact, 14 out of 16 girls guessed that "It" was female. The mean scores on the *test* were different ($p < .02$). *Conclusions*: The authors conclude that boys do have greater variability in sex role preference than girls. Their results do not support previous notions that the "It" figure is seen as male by most children. They emphasize the need for replication studies to discount any effect of experimenter bias, and they note that the assumption that masculinity and femininity are at the ends of a single bipolar continuum may be untenable. They intend to devise new measures of sex role identification and preferences.

5.2.1.5 Lynn, D. The process of learning parental and sex role identification. Speech at annual meeting of American Orthopsychiatric Association, San Francisco, 1966.

Purpose: To summarize the author's writings on sex-role and parental identification and present his latest thoughts on this topic. Earlier statements are found in *Psychological Review*, 1959, 66; *Sociometry*, 1961, 24; *Child Development*, 1962, 33; *Merrill-Palmer Q.*, 1964, 10. *Criticisms*: Theories of identification don't account for many phenomena observed and thus seem to be less theory and more disconnected explanations. Identification is a loosely used word applied to many types of behavior, whereas the author defines each behavior with a different term. *New Ideas*: (1) "Parental identification" refers to the internalization of personality characteristics and unconscious reactions of one's parents. (2) "Sex-role identification" refers to the internalization of the role typical of a given sex in a particular culture, including conscious and unconscious behavior. (3) Initial parental identification of all children is with the mother, but boys must shift to a masculine-role identification although he never has a same-sex model available for long periods of time as girls do. Thus the males available to the boy present him a general outline of what males do but are never around to be observed in depth, whereas the girl is always around women and observes the details of a woman's life. Therefore, boys learn a "somewhat stereotyped and conventional masculine role" through the "reinforcement of the culture's highly developed system of rewards for masculine-role behavior and punishment for signs of femininity." This weakens the boy's initial identification with the mother, and on this is built an identification with a stereotyped masculine role. Thus, "males identify with a culturally defined masculine role, whereas females tend to identify with their mothers." (4) "Both males and females identify more closely with the mother than with the father." Supporting this hypothesis are studies indicating that the tested similarity between mother and child is greater than the tested similarity between father and child.

Lazowick (1955) and Gray and Klaus (1956) all have significant results for tests of values and self-concept given to parents and their children. Tested similarity is very different from perceived similarity, for it is hypothesized that most people do see themselves as similar to others of their sex and must in order to feel secure. (5) The closer identification of males with their mothers will be revealed most frequently in personality variables which are not clearly sex typed. (6) "In learning the sex-typical identification, each sex is thereby acquiring separate methods of learning which are subsequently applied to learning tasks generally." Girls need only to imitate the women about them to learn their sex-role behavior, whereas boys learn from the negative restrictions of adult women who only tell him what he should not do and from the brief exposures he has to males. Thus, the boy must do more thinking, reshaping, and problem solving to learn what he should do than the girl, who needs only to observe and imitate the always present woman. Supporting this hypothesis are the results of studies indicating that from the age of 6 on, boys are consistently better problem solvers. (7) Because of the scarcity of complete male models and the demands for earlier sex-role behavior from boys, males tend to have more difficulty achieving same-sex identification than females, and more males than females fail in some degree to achieve same-sex identification. (8) More males are anxious regarding sex-role identification than females. The combination of earlier demands for masculine behavior made by adults close to the child and supported by threats of punishment create much anxiety in the young boy. (9) Males tend to hold stronger feelings of hostility towards females than females towards males because boys have been warned for years not to be "sissy-like" and to ignore this brings punishment. Thus, hostility toward "sissy-like" behavior is generalized into hostility towards "sissies" (women). However, girls are never punished so early or so servely for adopting masculine sex-role behavior, and they do this throughout life with ease. (10) With age, men become increasingly more firmly identified with the masculine role as the privileges given men in America increase and "permeate" every aspect of life. (11) With age, males develop psychological disturbances at a slower rate than women, who realized they have less prestige and privilege in our society. With age, girls have a progressively better opinion of boys and a poorer opinion of themselves (Smith, S., 1939). With age, a larger proportion of females than males show a preference for the role of the opposite sex and adopt an aspect of that role. (12) "Therefore, when a discrepancy exists between sex-role preference and identification it will tend to be as follows: men will tend to show same sex-role preference with opposite-sex identification." Women will have opposite sex-role preference and underlying same-sex identification. Conclusion: Every hypothesis is open to testing; while many of them are substantiated by experiments, there is need for better research before this theory can be completely accepted.

5.2.1.6 Vener, A.M., and Weese, A. The preschool child's perceptions of adult sex-linked cultural objects. Journal of Home Economics, 1965, 57, 49-54.

The purpose of this research was to determine the ability of preschool children to recognize the sex appropriateness of cultural objects associated with adult roles. Sixty boys and sixty girls between 30 and 60 months of age from East Lansing, Michigan nursery schools were selected as subjects. The group was not random but rather highly homogeneous with respect to socioeconomic status, which was upper-middle. Twenty boys and twenty girls were in each of three age groups: (1) 30 to 40 months, (2) 41 to 50 months, and (3) 51 to 60 months. Four persons from Michigan State University constructed a list of 63 male and female task and appearance items (e.g., lipstick, rolling pin, necktie, wrench, etc.). Fifty children between the ages of 7 and 11 were used to establish the validity of the items, since they were closer in age to the subjects than were the university originators of the list. These children were from the same socioeconomic background as the subjects. Ninety-six percent agreement between these "near peers" and the opinion of the originators was required in order to retain the items. The sex linkage of female items was more readily perceived than that of the male items. Responses to the final list of sex-linked articles which disagreed with the "near peer" classifications were considered errors. For the actual experiment, the subjects were placed into categories of high, medium and low number of error response. A chi-square technique was used. Older children made fewer errors than younger children ($X^2=71,88$, $p<.001$). A significant difference ($X^2=9.39$, $p<.05$) also existed within the female appearance category with girls more accurately perceiving the sex-linkage of these objects than boys. No significance was observed in differences of accuracy of boys and girls when the total list of items was considered. Although when the child's sex was considered without controlling for age, there was a significant difference in the type of errors as indicated above. Kinds of sibling relationships did not affect the number of errors or the type of errors. The authors conclude that preschool children are more accurate in their perception of female items than male items but that this difference is reduced by the age of seven. They state that although boys do not have the same capacity to recognize their same-sex appearance and task objects it does not necessarily indicate confusion in their sex role identity since this may not affect their sex role preference or their actual internalization of the role through the identification process.

5.2.2 ENVIRONMENTAL

5.2.2.1 Epstein, R., and Liverant, S. Verbal conditioning and sex-role identification in children. Child Development, 1963, 34, 99-106.

The purpose of this research was to test four hypotheses which are based on the premise that differential reinforcement value of male and female adults and "mother" versus "father" content reinforcement in a verbal conditioning situation is a function of the adequacy of sex-typing of young boys. Specifically the hypotheses were: (1) That subjects with high masculine identification perceive male adults as having more reinforcement value than female adults. (2) That a male examiner's reinforcement value is greater for high masculine identifiers than for low masculine identifiers. (3) The reinforcement value of a female examiner is greater for low-masculine identifiers. (4) That the ease with which "father" versus "mother" content is conditioned is a function of level of sex role identification. Subjects were 135 boys from 5 to 7 years of age from the kindergarten and first grade classes of two Columbus, Ohio public schools. The school districts were of the lower-middle socioeconomic level. The independent variable, sex role identification level, was determined by the "It Scale for Children." Reinforcement value of the adult was determined by the effectiveness of verbal approval ("Good") upon degree of verbal operant conditioning. The method of conditioning involved presentation of 75 questions (15 of which constituted the free operant phase with no reinforcement). These questions could be answered "mother," "father," "sister," or "brother." "Father" or "mother" responses were rewarded according to the appropriate condition. Difference scores were obtained between the free operant trials and the rewarded trials in order to determine degree of conditioning. The design of the study was a 2x2x2 analysis of variance with 10 in each cell (the 40 highest and 40 lowest scorers on the ITSC were selected for the conditioning treatment). The WISC was administered to determine the influence of the IQ on the variables. Significant main effects were found, indicating that the male experimenter was a more effective reinforcing agent than the female experimenter ($p < .01$) and that "father" content was more effectively conditioned than "mother" ($p < .05$). This content effect was true for both high and low masculine groups ($t=2.33$, $p < .05$). A male experimenter was a more effective reinforcer than a female experimenter for highly masculine subjects ($t=5.9$, $p < .01$) and the male experimenter was also a more effective reinforcer for highly masculine rather than for low masculine boys ($t=4.35$, $p < .01$). The WISC scores correlated insignificantly with both independent and dependent variables (.02 and .12 respectively).

The authors conclude that hypotheses 1 and 2 are verified by this experiment, and they explain that hypothesis 4 was not verified because the high salience of the male experimenter tended to "overshadow" the reinforcement value associated with the content "father." They attribute the lower conditionability of low masculine identifiers to instability and conflict which lead to an ambivalent perception of male and female adults, thus lessening responsiveness to their reinforcement. The authors point out the utility of exploration of "the joint influence of relatively stable psychological characteristics and situational factors upon learning..." They also challenge the notion that response content has little effect on the results of verbal conditioning.

5.2.2.2 Hartup, W. W. Some correlates of parental imitation in young children. Child Development, 1962, 33, 85-96.

"The purposes of this study were as follows: (a) to develop a measure of like-sex parental imitation in preschool children and (b) to explore the relation of this measure to sex-typing, sex of child, chronological age and maternal attitudes as measured by the Parental Attitude Research Instrument"(PARI). Hypotheses were: (1) that a positive relationship exists between imitation of the like-sex parent and degree of appropriate sex-typing; (2) that boys would exceed girls in the extent to which they imitate a father model in preference to a mother model and that girls would exceed boys in the extent to which they imitate a mother model in preference to a father model; and (3) that older subjects would have stronger tendencies than younger subjects to imitate the like-sex parent in preference to the opposite sex parent. Subjects were 29 girls and 34 boys from 3 1/2 to 5 1/2 years of age (mean age 4.8) from four nursery school groups. Social class (upper-middle) and intelligence (above average) were homogeneous factors in the sample. The measure of parental imitation was derived from a structured doll-play interview in which the subject using a child doll was asked to replicate acts performed by the parent dolls as manipulated by the experimenter. The interview consisted of 18 problem situations which were divided into three sets of six tasks. The first involved choosing between two paths to a goal (one taken by the mother and one taken by the father). The second set involved choosing between two conflicting value judgments made by the mother and father. The third involved choosing between two conflicting perceptual judgments. In each case the child doll was required to imitate either the mother doll or the father doll. The frequency with which the like-sex parent was imitated served as the final score. Reliability was .86 (corrected by Spearman-Brown formula) for odd-even correlation. The ITSC was administered to 30 boys and 27 girls as a measure of appropriate sex-typing. (Reported test-retest reliability for preschool subjects is .66 for boys and .71 for girls.)

The PARI was administered to the mothers of 27 subjects in an attempt to explore the relation between maternal attitudes and imitation. Pearson correlations between adequacy of sex typing (as measured by the ITSC) and frequency of imitation of the like-sex parent were significant for girls ($r=.38$, $p<.05$). Boys imitated the father in preference to the mother more frequently than did girls ($t=3.85$, $p<.001$); and because the procedure was a forced two-choice task, this finding also indicates that girls imitated the mother in preference to the father more frequently than did boys. Age differences in imitation of the like-sex parent were not significant, but older subjects showed a trend toward higher frequencies of like-sex imitation. Correlations of like-sex parental identification and maternal attitudes as measured by the PARI for the 27 cases examined revealed that nine of the 50 correlations were significant. These results indicate that like-sex imitation is enhanced for girls by mothers who are high on "authoritarian control" and "marital dissatisfaction" factors and for boys by mothers who display "authoritarian, conformity-producing, suppressive elements" in their PARI responses. The author concludes that femininity for girls is related to imitation of the mothers whereas masculinity for boys is not related to imitation of the father. Although both sexes preferred to imitate the like sex parent the relationship between this tendency and appropriate sex typing did not hold for boys, thus indicating that "imitation of the like-sex parent plays a more extensive role in the socialization of girls than of boys in the present culture." The lack of significance by age in imitation of the subjects is considered to be a function of the small range of ages (25 months). The fact that authoritarian maternal attitudes were related to like-sex parental imitation for both sexes and marital dissatisfaction of the mother was related to this factor in girls leads the author to pose several questions and to recommend further investigation of the way in which such attitudes mediate parental imitation.

5.2.2.3 Hetherington, E.M. A developmental study of the effects of sex of the dominant parent on sex-role preference, identification, and imitation in children. Journal of Personality and Social Psychology, 1965, 2, 188-194.

The purpose of this research was to investigate the effects of the sex of the dominant parent on (1) the sex-role preferences, (2) parent-child similarity on non-sex-typed traits, and (3) the child's imitation of his parents for children in three age groups. The subjects for the study were 108 boys and 108 girls divided into three age groups (4 to 5, 6 to 8, and 9 to 11) with 36 boys and 36 girls in each group. "Half of the boys and girls in each group came from mother-dominated homes and half from father-dominant homes." The children were enrolled in either nursery schools or elementary schools in a public school system. No information is given regarding socioeconomic class. To determine which parent was dominant, Farina's procedure was used. Each parent was interviewed individually and asked how he would solve each of 12 hypothetical child behavior problem situations. Then both parents were asked to jointly solve the problems in a second interview. Seven indexes of parental dominance were obtained as a result of these interviews, and families were classified as maternal dominant or paternal dominant if six of the seven indexes favored one dominant parent. The ITSC scale of Brown (1956) was used to determine sex-role preference. Parent-child similarity was determined in the following manner: A panel of 10 advanced education students judged a list of 130 adjectives and found 40 of them to be neutral with respect to masculinity-femininity and age variables (90% agreement). Children were rated on these non-sex-typed traits by their teachers, and parents were rated on the same traits by a friend who knew them well. An attempt was made to control for response bias. Test-retest reliability was .82 for ratings of mothers, .86 for fathers, and .79 for children. "Similarity scores were based on the numbers of identical responses in the mother and child, and father and child lists." The imitation variable was measured by comparing a subject's judgment of which member of a pair of pictures was prettier (20 pairs) with the observed judgment of each of his parents. The resulting imitation measure was the number of similar responses for mother-child and father-child. Parental dominance was found to influence sex-role preference ($p < .05$). "Mother-dominance was related to less masculine sex-role preference in boys" at all ages ($p < .01$), although the differences in sex-role preference for girls from mother-dominant versus father dominant homes was not significant. Girls developed appropriate sex-role preferences at a later age than boys ($p < .01$), with boys at age 4 to 5 having appropriate preference whereas girls did not show a significant difference in appropriateness of preference until the 9 to 11 age group. Father dominance was more conducive to appropriate preference than mother dominance. Four- and five-year-old subjects were lower on parent-child similarity than older subjects ($p < .01$). Subjects tended to be more similar to the dominant parent than the passive parent ($p < .01$) with mother dominance "tending to inhibit father-child similarity." Girls identified equally with mothers and fathers if they came from a father-dominant home, although the mother-daughter similarity in these homes was not different from that in mother-dominant homes. They showed considerably more similarity to the mother than father if they came from mother-dominant homes. On the imitation measure, parental dominance was again a significant factor with subjects tending to imitate the dominant parent ($p < .01$). Girls imitated more than did boys ($p < .01$). Correlations among measures by sex yielded significance only for older girls from father-dominant homes. The author concludes that the results support a theory of identification based on parental power with disruption in identification of boys resulting from inversions of normal parental dominance. Later social pressure on boys does not "adequately counteract" these effects. There is also an increase in similarity between child and dominant parent on non-sex-typed traits with increasing age, and this increase stabilized early in the school aged years. The lack of sex-role preference differences between girls from mother-dominant and father-dominant homes is viewed as "surprising" since a dominant mother offers an "unfeminine" model. The author points out that the dominance is in relation only to the father and not a comparison with other women. She notes that lack of paternal dominance rather than observed maternal dominance may account for the findings, since the less well defined female role may allow either dominant or passive behavior whereas passivity in fathers is inappropriate. In mother-dominant homes neither sons nor daughters identified with fathers, but in father-dominant homes girls continued to identify with mothers, though also identifying with fathers. The author also notes that these results concerning parental dominance support the "identification with the aggressor" hypothesis.

5.2.2.4 Landreth, C. Four year olds notions about sex appropriateness of parental care and companionship activities. Merrill-Palmer Quarterly, 1963, 9, 175-182.

The purpose of this research was to explore cross-culturally the notions of four-year-old children concerning the sex appropriateness of parental activities of care and companionship. It was hypothesized that (a) there would be sex differences in the subjects' notion of the appropriateness of care and companionship activities for mother and father; (b) that these differences would be more marked in Berkeley, California than in Wellington, New Zealand; (c) that these differences would be more apparent where the father was in a manual (M), rather than a professional (P), occupation; (d) that subjects' notions about an appropriate source of parental care would differ from their notions about an appropriate source of parental companionship. Six groups of 24 children comprised the sample (Wellington P and M boys and girls and Berkeley P boys and girls). Mothers of all subjects were full-time homemakers. Sibling information, birth order, amount of time spent with father, and test experience were all uncontrolled sampling variables. The procedure consisted or presentation of six line drawings to the subjects (three of which depicted common parental care situations and three of which depicted companionship activities). Subject was asked questions relating to the six pictures; such as, "Who helps a boy (girl) with his (her) bath? Mother or father?" Subject was then asked, "Who helps you?"

Results: Significance was determined by classifying subjects as either "mother choosers" or "father choosers" on the basis of

total frequency of choice of one parent as opposed to the other and then testing the null hypothesis that the proportion is .50. More subjects chose the mother in care contexts in five out of six groups ($p < .02$ to $p < .0001$). Only one of the six groups (Wellington P girls) chose the mother more often in companionship contexts ($p < .05$). The author confirms the first hypothesis on the basis of only two significant differences (out of 39 possibilities): Berkeley P girls chose mothers for giving care more often than did Berkeley P boys ($p < .02$). Wellington M girls chose mothers more frequently than did boys for companionship activities ($p < .01$). Sex differences were more marked in the Berkeley P group than in the Wellington P group for care activities only ($p < .02$), and no significant differences were found between the Wellington M and P groups on either care or companionship. In four of the six groups the choice of mother or father was dependent upon companionship versus care contexts ($p < .01$, $p < .10$, $p < .01$, $p < .05$).
Conclusion: The author concludes that girls believe that care is a function appropriate only to mother though both parents can appropriately give companionship, with two of the three boy groups believe it's appropriate for either parent to give both. The author speculates that because of these attitudes, girls get less social and intellectual stimulation from fathers than do boys and relates this to girls' later passivity as students and their lack of interest in the natural sciences. She also concludes that lesser degree of sex differences in the Wellington group may be the result of "a more relaxed attitude" toward sex-typing in New Zealand and that the lack of socioeconomic sex differences reflect New Zealand's equalitarian philosophy.

5.2.2.5 Lansky, L. The family structure also affects the model: Sex-role identification in parents of preschool children. Merrill-Palmer Quarterly, 1964, 10, 39-50.

The purpose of this research was to test the hypothesis that parental sex-role identification is related to family structure (sex of children) and to the age of the preschool child, and that the relationship between identification scores of mothers and fathers would vary systematically according to family structure. The sample was defined by 58 boys and 41 girls in preschool and kindergarten classes (ages 38 to 85 months) from middle and upper-middle class homes in suburban Boston. The parents of these children were the subjects. Each completed a mailed questionnaire consisting of Gough's Brief Femininity Scale, Franck's Drawing Completion Test, and a listing of all members of the household, including ages and sex of each. The 99 families were first divided into two groups (families with a preschool boy and those with a preschool girl) and these were subdivided according to sex of the siblings (e.g., "boys only," "at least one girl," etc.).

A further grouping of families with all children of the same sex versus those with children of both sexes was performed. For the analysis of family structure effects, the only significant difference on the masculinity-femininity tests (of all the possible comparisons) was that fathers of "boys only" families were more feminine than fathers of "girls only" families on the Gough Test ($p<.10$). A correlation matrix of the Gough Test results on mothers and fathers and age of the preschool child yielded the following results: (1) For boys with at least one sister, age of the preschool boy is negatively related to father's masculinity ($r=33$, $p<.05$). (2) For girls from "girls only" families, the older the preschool girl the more feminine the mother ($r=46$, $p<.10$). (3) For families with either boys or girls only, the older the preschool child the more feminine the mother ($r=.37$, $p<.05$). (4) Significant differences were found (at the $p<.05$ level) between seven pairs of correlations, indicating that the Gough Test results of mothers and fathers are not correlated with each other. The author makes several inferences from these differences although only three of the 10 correlations involved in the comparisons are significantly different from zero.

Conclusions: The author concludes that "there are differences by family structure in the correlations between the scores on the sex-role identification of parents and the age of the preschool child," and he further suggests that preschoolers at different age levels who come from different family structures have different models. He presents a table of results from the Franck Test, which he does not interpret except for one finding which highly contradicts finding No. 2 cited above from the Gough Test. This finding states that in "girls only" families the older the preschool girl the more masculine the mother($r=.-70$, $p<.01$). He indicates that further interpretation of the results will be forthcoming once other data have been studied and suggests that improvements should be made in this type of research by (1) devising tests of masculinity and femininity on two dimensions rather than one, (2) making modeling theories more complex, and (3) utilizing longitudinal and experimental approaches which elucidate the vicissitude of adult sex role identification and the consequences on sex role identification of the children.

5.2.2.6 Rosenberg, B.G. Sibling effects on siblings and parents--the search for a representative design in sex role identification. Presented at Orthopsychiatric Convention, 1966, San Francisco, California

Purpose: Instead of considering the parent as the primary source of sex role development as researchers have done traditionally, Rosenberg seeks to study the parent and child interaction as it affects sex role development in the child and changes it in the parents.

Method: Subjects are 226 members of one and two child families: mothers, fathers and siblings. All were given the Gough femininity (Fe) scale. Analysis of variance and correlational techniques were employed to assess the relationship of each parent's and each sibling's Fe to the subjects (which varied with each hypothesis and its testing). Analysis involved correlations with all members of the quadrads of the two-child family and comparisons of mean Fe for all members. Correlations were between mother-father, mother-first daughter, mother-second daughter, father-first daughter, father-second daughter, daughter-daughter, and the same for families with only sons or with a son and a daughter.

Findings: (1) Boys score lower on Fe than girls; fathers, lower than mothers. (2) Fathers are higher on Fe than sons; mothers, than daughters. (3) Mothers of boys are generally less feminine than mothers of daughters, but fathers do not differ significantly in this regard. For only children: (a) Girls are higher on Fe than boys. (b) Mothers of girls are significantly higher on Fe than mothers of boys. (c) Again, regardless of sex of children, fathers do not vary. For children in two-children families: (a) A girl with a sister has a significantly higher Fe score than a girl with a brother. (b) "Mother's Fe does not vary as a function of ordinal position or sex and sex of sibling or the child." (c) Fathers with two daughters are significantly lower on Fe than a father with a son and a daughter; thus fathers respond differentially to the sex of their children when there are two children; whereas mothers do not, and fathers in one child families do not. (d) The Fe score for two girl siblings is unrelated but there is a relationship between the Fe score of a girl who has a brother and her mother, $p < .05$. (e) In the opposite-sex dyad, the male sibling's Fe score is significantly related to the mother's Fe score, $p < .05$. (f) Female sibling's Fe score is unrelated to father's Fe score, but a son's Fe score is significantly related to father's, $p < .05$. (g) Fe scores for parents of all girls are unrelated but are significantly related ($p < .05$) for parents of opposite sex children.

Conclusion: (a) Following the literature on ordinal position, first born girls in a two-girl family are more feminine, just as they usually are more conforming, dependent, identifying, whereas nonfirst-borns are less dependent, more autonomous. (b) Mothers do not differ on femininity as a function of sex composition of their children, thus showing that they do not respond differentially to children in terms of their sex (but his own data contradict this assumption unless there is a misprint in the earlier pages). (c) Father's Fe scores vary as a function of their children's sex; with two daughters, they are less feminine, probably due to their awareness of being the only man in the house; with a son and a daughter, they are more feminine. (d) Boys with a mother and two sisters show heightened masculinity (conflict induced), just as fathers in all female-children houses do.

(e) Girl with a sister does not have a Fe score related to mother, but girl with a brother does, with heightened awareness of her sex by having an opposite sex sibling. (f) Boys in cross-sex dyad have an Fe score related to their mothers' because there is less protest masculinity in the whole environment; the father's Fe score is higher than in the all-girl dyad family. (g) Opposite-sex dyad family has greatest acceptance of opposite sex characteristics in father and child and has the highest measure of expressive creativity.

5. 2. 3 MEASUREMENT AND TECHNIQUES

5. 2. 3. 1 Brown, D. G. Sex-role preference in children: methodological problems. Psychological Reports, 1962, 11, 477-478.

The purpose of this report is to discuss contradictory results from research on sex role preference of children as it relates to the methodological problem of selecting a neutral figure for the ITSC technique of Brown. The author presents support for the argument that, in our masculine-oriented society, any figure lacking specific sex traits will be perceived by both sexes as male. He explains that this fact is responsible for the discrepancy between the finding of Lefkowitz (1961), that girls have as much appropriate sex role preference as boys when they are presented with a direct choice, and those findings of his own research with the ITSC, that boys express more appropriate sex role preference than girls. Conclusion: Brown concludes that in order for the ITSC to be useful with children of school age or older, a major modification of the "IT" figure is necessary. One such change is the use of a blank card which would be presented in lieu of the stick figure "IT" with the instructions to the child to "imagine the picture of a child on the card."

5. 2. 3. 2 DeLucia, L. A. The toy preference test; a measure of sex-role identification. Child Development, 1963, 34, 107-117.

The purpose of this research was to devise a technique for measuring sex-role identification and to apply formal pretesting in order to establish the reliability of the instrument. The subjects used for this research were from five separate grades (kindergarten through fourth) in the Broad Street School at Providence, Rhode Island. Nineteen females and twenty-eight males enrolled in introductory psychology courses served as raters of 52 photographs of familiar children's toys. The rating was done on a nine point scare of masculinity-femininity and two sets of pictures with 24 pairs in each set were established. The "5X7" photographs were presented to each subject along with a drawing of a boy or a girl, depending on the sex of the subject. The pictures were presented in pairs, and the subject was asked which of the two toys the child in the drawing would like to play with. Scoring was one point for sex-appropriate response and no point for sex-inappropriate response. A choice was considered sex-appropriate if it had a more sex-appropriate rating than the picture with which it was paired. There was an orderly increase in number of appropriate choices with grade advancement and the authors cite this as evidence of face validity ($F=16.66$, $p<.001$). Boys made more appropriate choices than girls ($F=6.42$, $p<.025$). The interaction of sex and school grade placement indicates that the difference by sex is small in kindergarten and first grade but increases in later grades ($F=2.67$, $p<.05$). Equivalent form reliability for 18 kindergarten subjects was rho=.57. Children made more appropriate choices when neither of the choices in the pair was appropriate for their sex than when both choices in the pair *were* appropriate (one less appropriate than the other) ($F=71.95$, $p<.001$). This was more pronounced for boys with the interaction effect of sex and appropriateness of toys significant at the .001 level ($F=30.32$). Test-retest reliability was between .67 and .72 (rho) when an opposite-sexed experimenter administered the test but only between *.13* and *.37* when administered by a same-sexed experimenter. Item analysis results are given for "Picture Set A." The author notes that there was a reversal of the trend toward improvement of score with higher grade between grades 3 and 4 with the fourth grade students obtaining poorer scores. The difference was not significant, but the author questions whether this represents a "real" phenomenon. She states that the test has a ceiling effect which makes it inappropriate for boys over 8 and girls over 10 years of age. Noting the more appropriate responses of boys than girls with increasing age, and the higher reliability obtained by an opposite-sexed experimenter, she acknowledges the important influence of the female teacher on male children. Also she comments on the sex difference when both toys are appropriate or both inappropriate and depicts the choice between two appropriate toys as a safer situation in which either choice is correct, thus leading toward more cursory examination of the alternatives.

5.2.4 INTERVENTION

5.2.4.1 Bandura, A., Ross, D., and Ross, S. A. Vicarious reinforcement and imitative learning. *Journal of Abnormal and Social Psychology,* 1963, 67, 601-607.

The purpose of this study was to determine the influence of response-consequences to the model on the imitative learning of aggression.

It was hypothesized that subjects who observed a model who was positively reinforced for aggressive behavior would show more imitative and nonimitative aggression than subjects who observed a model who was punished for aggressive behavior. Subjects were 40 boys and 40 girls from the Stanford University Nursery School. The mean age was 51 months and the ages ranged from 38 to 63 months. They were randomly assigned to one of four groups: (1) aggressive model-rewarded, (2) aggressive model punished, (3) a control group who observed high expressive but nonaggressive models, and (4) a control group who were not exposed to the models. Five-minute film sequences were projected onto a TV console and shown to the children who believed they were watching a TV program. Two adult males served as the models through their interaction in the films. In one film (aggressive model-rewarded) the aggressive model overpowers the other figure and takes all his toys. In the aggressive-model punished film the aggressive model is frustrated in his attempts to take the toys and is beaten severly by the other figure. In the nonaggressive model control group film, the figures played vigorously (but not aggressively) with the toys. Each child then spent 20 minutes under observation in the test room which contained the same toys used in the films. Observations at 5 second intervals yielded 240 response units for each child. One experimenter did all the ratings, and interrater reliability based on 11 cases yielded correlations in the 90's. The frequency with which the subject imitated the responses used by the model in playing with the toys (e. g., kicking a Bobo doll) constituted the imitative aggression score. Nonimitative aggression was measured by the frequency of physically aggressive responses which were not observed in the behavior of the model. Subjects who had observed the models were later asked to evaluate the behavior of the two models and to tell which model they preferred to imitate. Because many children exhibited very low imitation scores, the Kruskel-Wallis analysis of variance and the Mann-Whitney U test were used to analyze the data. Response consequences of the model significantly influenced imitation ($p < .05$). Children who observed the model being rewarded displayed more imitative aggressive behavior than did any of the other three groups (Mann-Whitney U test showed significance for the following comparisons: rewarded versus punished, $p < .05$; rewarded versus nonaggressive, $p < .025$; rewarded versus control, $p < .001$). The subjects reported preference for imitation of the aggressive model more frequently when he was rewarded than when he was punished or given access to the reward without displaying aggression ($X^2=19.85$, $p < .001$). A 2-way ANOVA of the *nonimitative* aggression did not reveal any significant main effect of treatment but did show a highly significant sex difference ($p < .001$). ANOVA of the *total aggression* scores also showed this difference ($p < .001$) as well as a sex by treatments interaction effect ($p < .05$). Boys were equally influenced to display aggression by both the reward model and the expressive (but not aggressive) model, whereas girls who observed the nonaggressive model inhibited aggression most as compared with the girls who observed either of the response consequences. The authors conclude that imitation is partly dependent on the response consequences to the model. They note that although the subjects incorporated the aggressive behavior they recognized that it was objectionable and resolved the conflict, not by enchancing the attractiveness of aggression, but rather by justifying the aggression through criticism of the other figure in the film (e. g., "he didn't share his toys"). The fact that successful acts emphasizing objectionable means may outweigh the subject's value system is seen as justification for renewed evaluation of TV program content. Fear of a punitive agent (e. g., identification with the aggressor) is seen as irrelevant in the identification process and the success of the model is considered the crucial factor. The authors explain that the observed sex difference implies that where aggression is only weakly established in the behavioral repertoire, self-control may be enhanced by provision of models who demonstrate incompatible prosocial behavior, whereas where aggression is dominant (e. g., in boys) inhibition may depend on aversive consequences to the model. They state that imitative responses are learned "on the basis of contiguous association of sensory events" but that anticipation of consequences affects the probability of occurrence. Response consequences to the model or the observer influence the performance probability of imitatively learned responses.

5.2.8 GENERAL

5.2.8.1 Lynn, D. B. Sex role and parental identification. Child Development, 1962, 33, 555-564.

(1) The purpose of the article is to present a "theoretical formulation which postulates basic sex differences in the nature of sex-role and parental identification, as well as basic differences in the process of achieving such identification." This formulation is seen as a contribution toward a more elaborate theory of identification and as a source of hypotheses concerning psychological sex differences. (2) Existing theories have not adequately examined the degree of pervasiveness of sex differences in personality development, and many studies have neglected to make provisions for sex differences in their designs. (3) The author utilizes a previous hypothesis (which he presented in another article) that males identify with a cultural stereotype of the masculine role, whereas females identify specifically with the role behavior of their mothers. Thus the nature of sex role acquisition is different for the two sexes. The process of achieving sex role identification is postulated to be different for the two sexes in that the boy's sex role learning

involves problem solving (i. e., exploring the situation and finding the goal), whereas girls learn proper identification in lesson from which involves imitation of the mother's behavior and eliminates the need for restructuring the field, abstracting principles, and defining the goal (all of which must be performed by the male who has less opportunity to observe a model). (4) The author lists five hypotheses which are generated from his theoretical formulation, and he cites relevant research findings from other studies in support of his assumptions: (a) Females will demonstrate greater need for affiliation than males (since they learn sex role identification through a rewarding affiliative relationship with the mother, which becomes generalized to other situations and assumes secondary drive characteristics. (b) Females are more dependent than males on the external context of a perceptual situation and will hesitate to deviate from the given (since the feminine learning method involves observation and imitation of the mother's behavior and does not require restructuring). (c) Males generally surpass females in problem-solving skills (again, because of generalization of the identification problem-solving method which is required for males but not for females). (d) Males tend to be more concerned with internalized moral standards than females. (Generalizing from the identification learning process, females would be more likely to follow the moral standards of others, whereas males would abstract moral principles and need to internalize them.) (e) Females tend to be more receptive to the standards of others than males (because they tend to learn the lesson as given without restructuring it).

5.2.8.2 Lynn, D. B. Divergent feedback and sex-role identification in boys and men. Merrill-Palmer Quarterly, 1964, 10, 17-23.

(1) The purpose of this article is to integrate findings of research which relate to sex role identification and to present hypotheses relating to the learning of appropriate sex role behavior for boys through avoidance learning. (2) Rather than criticizing existing theories, the author is attempting to elucidate parameters of sex typing of boys by utilizing existing research findings and integrating tangential theories. He notes that there is a need for further research and attempts to offer foci for such studies. (3) After noting the findings which demonstrate avoidance learning of sex role by boys (Hartley and Hardesty, Emmerich, Sutton-Smith and Rosenberg), the ineffectiveness of learning through divergent feedback (information that the individual is not progressing toward the correct goal), and the arguments of Hilgard against punishment as a method of behavior control, the author presents the following hypotheses: (1) Males tend to have greater difficulty in achieving sex role identification than females, because males must shift from feminine identification to secondary masculine identification; demands for appropriate sex role behavior are made earlier; the

demands are made in the form of punishing divergent feedback, etc. (2) Males are more anxious regarding their sex role identification than females because of greater dissonance due to divergent feedback and because of the greater use of punishment. (3) Males hold stronger feelings of hostility toward females than females do toward males because of generalization of the dislike of feminine activity which has been inculcated through pressure and punishment. (4) Where a discrepancy between sex role preference and sex role identification exists, it will follow the pattern for males of showing same sex role preference with underlying opposite sex identification, and for females of showing opposite sex role preference with same sex identification. (4) In support of the first hypothesis, the author cites findings from DeLucia, Sears, and Grinder. The evidence for the second hypothesis is more ambiguous, with support from a study by Hartley, but conflicting evidence from a study by Kagan and Lemkin. Similarly hypothesis No. 3 is considered in need of further research in light of conflicting evidence from the Hartley and the Kagan and Lemkin studies. Studies by DeLucia, by Gray and Klaus, and by Langwick are cited as evidence to support the fourth hypothesis as well as surveys which showed a much higher incidence of adult female preference for the masculine role than adult male preference for the female role. The author's intention is that these hypotheses serve as directions for future research.

5.2.8.3 Mussen, P., and Rutherford, E. Parent-child relations and parental personality in relation to young children's sex-role preferences. *Child Development*, 1963, 34, 589-607.

The purpose of this research was to test the validity of the developmental identification hypothesis especially with reference to the girl's identification with her mother. The authors investigated the relation between sex role preference and (a) parent-child relationship, (b) Parental personality characteristics, and (c) parental encouragement of appropriate sex typing. Subjects were first grade children (between 5 and 6 years of age) in a middle class public school in Berkeley, California. Fifty-seven girls and forty-six boys were divided into two groups for each sex on the basis of ITSC scores (those above the median and those below). Each child later was asked to act out (through doll play) the completion to nine incomplete stories to determine their perception of their parents. Mother interviews were conducted to provide additional data relating to parent-child relationships. These interviews were rated on 19 scales from Sears, *et al*, *Patterns of Child Rearing*. Only 19 of the 57 mothers of girls were interviewed. The Femininity and Self-Acceptance scales of the California Psychological Inventory were sent to all parents and returned by 32 of the girls' mothers and 30 of the girls' fathers. Twenty-two boys' mothers and eighteen boys' fathers returned the scales. A list of 50 well known sex typed children's games, activities, etc. was selected from the Rosenberg and Sutton-Smith list, and parents were asked to indicate for each item whether they had played the game with the child, encouraged the child to play it, or discouraged the child from playing it.

Results: Doll play data revealed that highly masculine boys (ITSC) told more stories involving father nurturance ($p < .05$) and father power (a combination of nurturance and punitiveness stories) ($p < .025$). A trend was also noted toward more stories involving father punishment ($p < .10$). Results from the CPI and the play and games list did not yield any significant differences for boys. Girls' scores on doll play indicated that the highly feminine girls told more stories involving mother nurturance ($p < .05$), mother power ($p < .05$), and total nurturance (mother and father) ($p < .05$). The mother power significance is attributable to mother nurturance (rather than mother punishment) and the total nurturance significance is also attributable to mother nurturance (rather than father nurturance). Maternal interview data yielded only one significant difference (favoring the highly feminine girls) from the 19 variables rated. This variable was "warmth of mother to child" ($p < .05$). Mothers of highly feminine girls were more self-acceptant ($p < .005$) although not more feminine than mothers of less feminine girls, according to CPI results. Fathers of highly feminine girls tended to be more masculine ($p < .10$), although the difference is not highly significant. The fathers of highly feminine girls provided more encouragement of sex appropriate behavior than those of less feminine girls ($p < .05$). In contrast the mothers of these two groups of girls did not differ on amount of encouragement.

Conclusions: The authors state that this study served as a replication of previous studies of male sex role identification and verified the importance of nurturance and power as characteristics of the father which facilitate sex typing. This sex typing was not affected by mother relationships, personality structure of parents (self-acceptance and masculinity or femininity), or parents encouragement of boys toward appropriate sex role activity. The authors further note that the "...girl's family must play more forceful and direct roles as teachers and socializers than the boy's." They indicate that the boy receives more support from the cultural environment than the girl and that the girl's family must provide her with motivation to acquire femininity, encouragement to adopt the characteristic feminine behavior, and discriminatory cues through their own characteristics. They state that these findings support the psychoanalytic view that sex typing is more complicated for girls than boys, and they note that this difference may result from certain features of the social structure that assist boys more than girls (e.g., the male role is more highly valued and more well-defined).

5.2.8.4 Spencer, T. D. Sex-role learning in early childhood. Journal of Nursery Education, 1964, 19, 181-188.

> The purpose of this article is to review empirical findings of studies relating to sex-role learning of young children. Specifically the author discusses: (1) measurement of sex role development, (2) the nature of sex role learning, (3) correlates of sex typing, (4) family dynamics, and (5) the relationship of early sex role acquisition and adult personality. (1) Research relating to Brown's It Scale for Children (ITSC), the Toy Preference Test of DeLucia and the check list of Rosenberg and Sutton-Smith are discussed. (2) Differences in sex role learning attributable to sex and social class are reviewed; the effects of cultural change are discussed, and avoidance learning is stressed for boys. (3) The relationships of impulsivity, anxiety, and intelligence to adequate sex typing are discussed. (4) The significance of parental attitudes and the quality of their relationships with children are reviewed in terms of resulting sex typing. The effects of sibling sex are also discussed. (5) Longitudinal evidence is examined which demonstrates the effects of sex role identification on the adoption and maintenance of other personality traits. The stability of early sex role learning is also confirmed by this evidence. (6) The author concludes that the studies reviewed have shed light on the parent's role as a model and guiding influence and on the different modes of learning sex roles according to sex of the subject. He notes that there is a scarcity of research on children's demands upon each other for adequate sex role behavior and differences between children within the family in sex role development.

5.3
SOCIAL REINFORCEMENT

5.3.1 NORMATIVE

5.3.1.1 Horowitz, F. D. Incentive value of social stimuli for preschool children. Child Development, 1962, 33, 111-116.

Problem: To study the incentive value of pictures of peers for preschool children. These pictures were defined as social stimuli for the children.
Hypothesis: In a lever pulling task, preschool children would remain longer when the task involved seeing a picture of a best friend than when it involved seeing a picture of a neutral peer, which in turn would keep children longer than when the task involved seeing a blue light.
Subjects: There were two groups: 27 younger subjects, 15 boys and 12 girls (mean age 3 years, 10 months) and 27 older subjects, 15 boys and 12 girls (mean age 5 years, 1 month). Both groups attended preschool at the Iowa Welfare Research Laboratory. Subjects came from mainly upper middle class managerial and professional families.
Procedure: Subjects were randomly assigned to three treatment groups, balanced for age and sex, in which the social stimuli was a picture of a best friend, a picture of a neutral peer, or a blue light. A picture sociometric test and teachers' judgments in friendship patterns were obtained before the testing began and served as the basis for the selection of stimuli for the best friend and neutral peer groups. Each subject was told that he was going to play a game and that he could play as long as he liked. The children in each group saw their appropriate stimuli every third lever pull. A measure of the incentive value was determined by the total time spent in the experimental situation, the total number of stimulus exposure, and subject's rate of response.
Results: (1) In the 3-year-old group, the hypothesis was supported for total time spent and number of exposures. Rate of response did not differ in the three treatment groups. (2) For the 5-year-olds, no significant differences were found between the three treatment groups on any of the three variables. (3) No significant sex differences were found on any of the measures.

5.3.3 MEASUREMENT AND TECHNIQUES

5.3.3.1 Baer, D. M. A technique of social reinforcement for the study of child behavior: behavior avoiding reinforcement withdrawal. Child Development, 1962, 33, 847-858.

Question: To investigate the principle of social reinforcement by a method which makes it a controlled independent variable in an experiment. "The specific purpose of this study is to show that a mechanized talking puppet can serve as an effective source of attention for preschool children so that behaviors which avoid the loss of the puppet's attention increase in strength. Furthermore it will be asked whether the subjects' behaviors for the puppet's attention correspond in strength with their typical behaviors for attention in the nursery school setting" (p. . 848).
Method: (a) Subjects: 16 preschool children, aged 4 years, from a University Nursery School. (b) Procedure: A mechanical puppet was used as a reinforcer. He was seated on a stage. The experimenter could control puppet's voice (speak through speaker), head (facing child for attentive posture or chin on chest for inattention), chin (more with speech), and right arm. Experimenter could also control light on stage (out for inattention). Microphone on stage conveyed voices of puppet and child to experimenter and to tape recorder. Each subject has three 20-minute sessions. Puppet had routine conversation interrupted by withdrawal of attention (turn off light, drop head on chest, stop talking). The child could regain the puppet's attention by pressing bar. A reinforcement schedule was set up and a cumulative record was made.
Findings: Consistent individual differences were found in attention-seeking behavior. For five subjects, identified in advance by nursery school teachers to represent points on a scale of attention-seeking behavior, there was perfect correlation between teacher's judgment and experimental results. Correlations for teachers ranking of all children with qualitative ranking by eye of cumulative records was .72. Correlation of teachers ranking with a quantitative ranking by number of attention withdrawals in a time sample and length of periods subject allowed attention to be withdrawn was .67.
Conclusions: Attention seeking behavior, similar to that observed in the nursery school, was obtained in a controlled setting by operant conditioning using a puppet as social reinforcer.

5.3.4 INTERVENTION

5.3.4.1 Kelly, R., and Stephens, M. W. Comparison of different patterns of social reinforcement in children's operant learning. Journal of Comparative and Physiological Psychology, 1964, 57, 294-296.

Recent studies have found punishment to be more effective than praise as a reinforcement in concept formation and discrimination tasks, as well as differential effects of reinforcement expectancies upon response. This study dealt with the effect of social reward and punishment on simple motor task performance and looked for some evidence for the effect of previous social reinforcement. Subjects were 180 male kindergarten children, 5 years, 6 months to 6 years, 7 months, of the middle and upper-lower class. Subjects were tested individually on a task of dropping marbles one at a time, and with only one hand, through holes in a board. There were three conditions of a 5-minute prelearning situation in which subject was asked to draw a man, a house, and then anything else he desired to: (1) regular positive reinforcement (praise); (2) regular negative reinforcement (criticism); and (3) alternating positive and negative reinforcement. All the reinforcement was verbal and produced every 30 seconds during the prelearning. In the marble game, or testing situation, which followed there were also three conditions: (1) regular positive periodic reinforcement; (2) regular negative periodic reinforcement; and (3) no reinforcement. Conditions 1 and 2 were produced 10 times during the 5-minute acquisition period and were worded so as to emphasize the value of speed of response. All groups had a 6-minute extinction period with no reinforcement. The number of marbles dropped through the tray per minute was the criterion measure. ANOVA's were performed on the repeated measures factorial designs of 3x3x5 for the acquisition data and 3x3x6 for the extinction data, with 20 subjects per cell. Significant results for the acquisition data were the trials main effect ($p < .01$); i.e., there was reliable change in response rate for the entire group; reinforcement main effect ($p < .01$); and reinforcement x trials interaction ($p < .01$). None of the prelearning reinforcement produced any significant effects. For the extinction data only the main effect of reinforcement was significant ($p < .01$), because the response rate of the negative reinforcement group remained high while that of the other two groups dropped off. The finding that punishment produced a higher response rate during both acquisition and extinction is similar to findings of other studies. There was no direct evidence to support a hypothesis about the effect of the type of immediately prior reinforcement. The authors suggest that perhaps avoidance of criticism is a more powerful motive than the attainment of approval, and perhaps the subjects' differential expectancies of the consequences of criticism and praise may mediate the relative effectiveness of criticism as an incentive in a simple task performance. (This may also be somewhat related to the socioeconomic status of the subjects.).

5.3.4.2 Stein, A. H., and Wright, J. C. Imitative learning under conditions of nurturance and nurturance withdrawal. Child Development, 1964, 35, 927-938.

This study attempts to test the propositions that imitation is maintained by social reinforcement; that the effectiveness of this reinforcement is enhanced by a high level of nurturance in the adult model; and that a sharp withdrawal of nurturance occurring where a background of nurturance existed arouses dependency anxiety, subsequent dependent behavior, and "any other behavior upon which social reinforcement is contingent." Hypotheses were as follows: (1) Nurturance should elicit more imitation than nonnurturance on the part of the model. (2) Nurturance followed by sharp withdrawal of nurturance should elicit still more imitation, due to the arousal of dependency anxiety. (3) The amount of directly dependent behavior would serve as an indicator of the degree to which nurturance and nurturance withdrawal were successful in arousing dependency motivation. Sixty subjects (30 boys and 30 girls) were drawn from two university group nursery schools and 60 more (30 boys and 30 girls) were drawn from lower class day care nurseries. The latter group had lower income families, more working mothers, and more absent fathers. The age range of the total sample of 120 subjects was 3. 11 to 5. 5. The procedure involved choosing from 12 colored piles of pipe cleaners, "quills," to be inserted into a piece of clay which represented a "porcupine." The piles were arranged on a round table and the subject was reinforced verbally by the experimenter if he chose a quill of the same color or from a pile immediately next to that of the experimenter's choice. Each subject was presented with two series of 12 imitation trials which were separated by the experimental treatment. Random assignment of subjects into three groups was performed. Condition "N" involved continuous nurturance where the experimenter read a story to the subject between sets of trials and responded warmly to bids for attention. Condition "W" involved nurturance withdrawal whereby the experimenter did not complete the story and sat silently without communicating with the child for 2 minutes. Condition "C" (control) involved neither nurturance nor nurturance withdrawal, the experimenter leaving the subject alone in the room for 2 minutes. Motor and verbal behavior irrelevant to the task was performed by experimenter and a concealed observer recorded the degree of imitation of this behavior of the subject. Also this observer recorded subject's attempts to gain experimenter's attention or approval. Three-way ANOVA yielded no significant main effects on change of frequency between the first and second trials for the three groups. To determine the effects of the treatments on desire for approval and fear of rejection, subjects in each treatment group were divided into two groups on the basis of change in frequency of attention seeking between the two series of trials. Group "DR" included all subjects who showed an increase in dependency. Reverse effects were noted between the W and C conditions and the N condition. The subjects in the former two groups whose dependency scores increased (DR) showed significant increases in imitation ($p < .005$ for both), while those whose dependency decreased or remained constant (DD) showed no significant differences in imitation. In contrast, the subjects in the N group whose dependency scores increased (DR) showed no significant change, while those in the N group and also in the DD group showed significant increases in imitation (p<.005). These same factors were examined through ANOVA to test the effects of sex and socioeconomic status. The main effects were not significant, though a significant interaction of experimental conditions and dependency change was noted (p<.025). The post hoc interpretations offered by the authors are considered revised hypotheses rather than conclusions. They state that the "W" or "C" subjects whose dependency *increased* also increased imitation because this reduced their dependency anxiety, which was high due to uncertainty of the experimenter's nurturance. The "W" or "C" subjects who showed *decreased* dependency are presumed to have reacted with frustration and avoidance of experimenter rather than dependency anxiety. The "N" subjects who reacted with *increased* dependency did not show increased imitation, and the authors speculate that this occurred because they were reinforced during the experimental treatment for more direct attention seeking behavior. They assume that the "N" subjects who reacted with *decreased* dependency (for whom imitation increased contrary to prediction) experienced satiation of the dependency motivation and focused their attention on the task rather than on the experimenter. They note that there was little basis for conclusions concerning sex or population differences.

5.3.4.3 Stevenson, H. W., Hickman, R. K., and Knights, R. M. Parents and strangers as reinforcing agents for children's performance. *Journal of Abnormal Social Psychology*, 1963, 67, 183-186.

The purpose of this research was to determine the relative effects of social reinforcement on the performance of preschool children when the agents of the reinforcement are either parents or strangers. *Method:* Subjects were 116 boys and 116 girls from nursery schools in Minneapolis and St. Paul, Minnesota. Their ages ranged from 3-0 to 5-0 years, and they were in the above average intellectual and socioeconomic class levels. Subjects were divided into groups according to their sex, sex of experimenter, and type of experimenter (parent or stranger). The performance task consisted of placing marbles in holes (one at a time), and the criterion was number of marbles placed during a 5-minute trial. Baseline rates were determined by a 1-minute pretest, during which no reinforcement was given by experimenter. During the reinforced trial, experimenter gave verbal reinforcement twice a minute for 5 minutes. (All experimenters were previously trained in the procedure.) The base rate for each subject was subtracted from the number of marbles inserted in each of the 5 minutes of testing, and the mean of these difference scores was computed. *Results:* During the base rate trial, subjects tested by a male experimenter scored higher than those tested by a female experimenter ($F = 5.24$, $p < .05$). Analysis of the difference scores revealed that father experimenters produced lower increments than mother experimenters ($t = 1.88$, $p < .05$). The difference between male and female experimenters was also significant with female experimenters producing higher increments ($F = 8.98$, $p < .01$). Strangers produced greater increments than parents ($F = 4.99$, $p < .05$). Analysis of the *total* number of responses made during the pretest *plus* the 5-minute trial indicates that girls made more responses than boys ($F = 6.39$, $p < .05$), and subjects in the stranger experimenter group did better than those in the parent group ($F = 4.40$, $p < .05$). Separating the groups according to type of experimenter (parent or stranger), it was noted that performance decreases across the 1-minute trials for subjects tested by their parents ($F = 2.27$, $p < .05$), while it increased for subjects tested by strangers ($F = 2.26$, $p < .05$).

Conclusions: The authors conclude that supportive statements are reinforcing only in certain adult-child combinations. The results support their hypotheses that female experimenters and strangers are more effective reinforcers than male experimenters and parents. In both stranger and parent groups, they note that the least effective adult-child combination was a male adult with a boy and the most effective combination was a female adult with a girl. They speculate that the higher base rate for subjects in the male groups may result from higher anxiety derived from the novelty of male adults in a school setting and that the supportive statements from these males in the 5-minute trial reduce anxiety and thus decrease response rate. They contend that the function of the supportive statement depends upon the type of initial motivation induced by the experimenter. They relate the higher response rates of girls to their higher degree of identification with the mother, indicating that such identification results in the approval of the mother being interpreted subjectively as self-approval as well.